Mini System FW40/20/21/22/25/30/37

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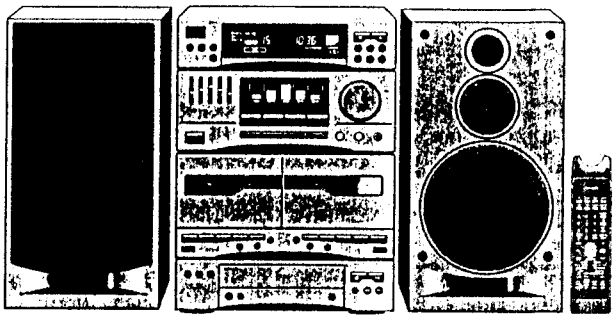

ServiceManua

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"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

CLASS 1
LASER PRODUCT

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4822 725 23265

PHILIPS

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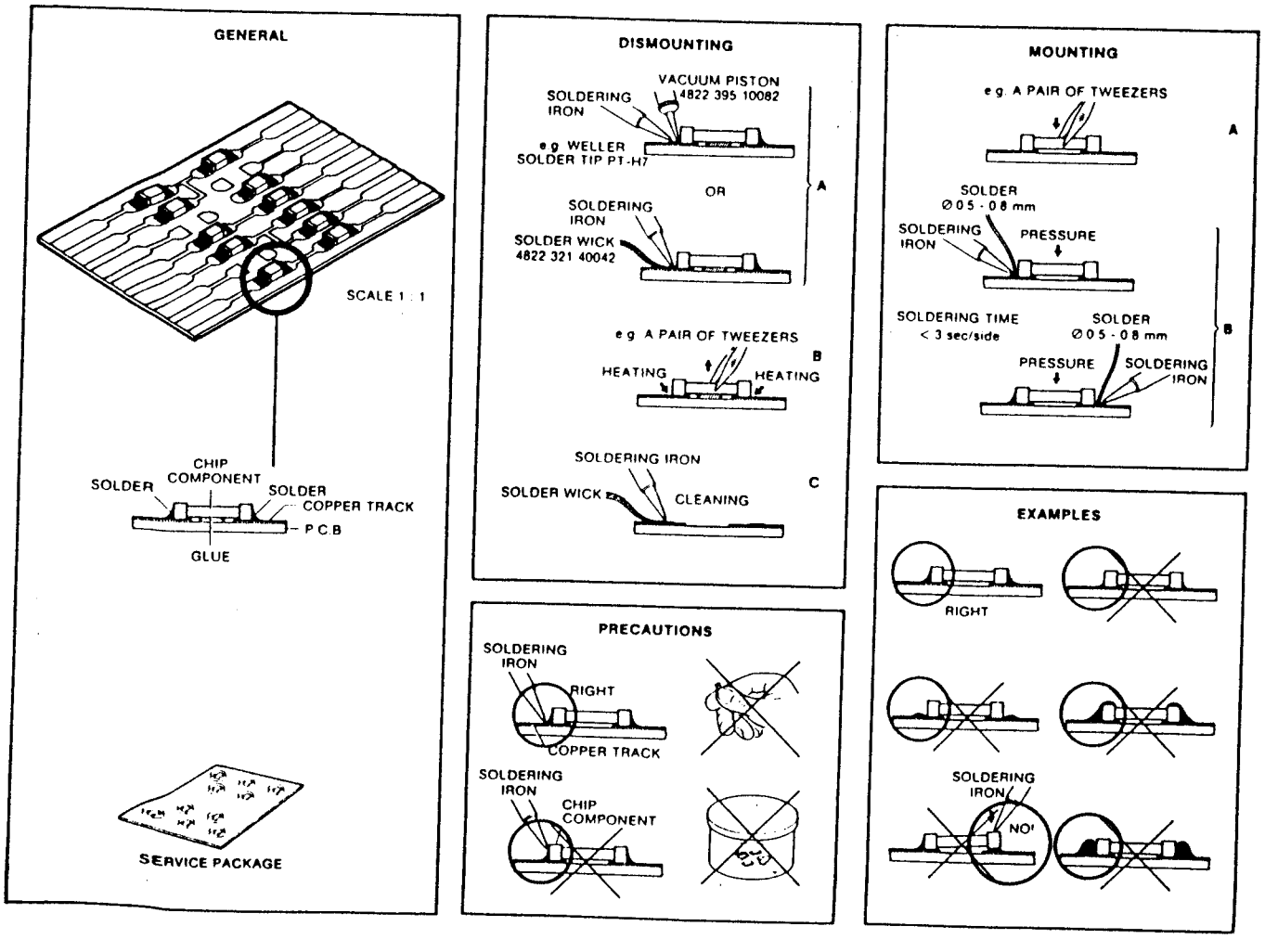
CONNECTIONS AND CONTROLS

1 IR sensor		6405
2 FTD display		1401
3 Tuner controls	Preset up/down	1419, 1420
	Tuning up/down	1426, 1427
	Band	1418
	Mono	1421
	Autoprogram	1429
	Program	1428
4 GE Display		1402
5 Volume control		3534
6 Headphone socket		1510
7 Spatial sound		1432
8 Dynamic bass boost		1433
9 Record/playback deck	Record/pause1	900
	Fast rewind	1908
	Fast forward	1906
	Play reverse	1924
	Stop	1902
	Play forward	1926
	Eject	1904
10 Auto reverse		1901
11 Dolby B NR		1914
12 CD controls	Repeat	1913
	Scan	1912
	Shuffle	1915
	Program/review	1916
	Clear	1917
	Edit	1922
	Stop	1921
	Play/pause	1918
	Tray open/close	1919
	Previous	1920
	Next	

13 Mic mixer (Karaoke)	Mic socket	1502
	Mixer control	3507
14 Dubbing speed	High	1905
	Normal	1910
15 Play deck	Play reverse	1923
	Stop	1903
	Play forward	1925
	Fast rewind	1909
	Fast forward	1907
16 CD synchro		1911
17 Digital sound control	Jazz	1410
	Pop	1411
	Classic	1412
	Flat	1413
18 Power on/off (Standby)		1431
19 Function controls	CD	1414
	Tuner	1415
	Tape	1416
	Aux/TV	1417
20 Graphic equalizer		3507 - 3511
21 Clock set		1422
22 Timer/News control	Timer	1425
	News	1424
	Timer/News set	1423
A Speaker output socket		1260
B FM Aerial socket		1110
C AM Aerial socket		1111
D Aux/TV input socket		1554
E Voltage selector		1262
F System reset switch		1558
G AC supply socket		1261
H Phono input socket		1554

HANDLING CHIP COMPONENTS



Service Information

1992 - 11 - 13

FW20, FW30 and FW40 families

A92 - 181

Product Service Group CE Audic

The following are problems and solutions implemented during production:

FW20, FW30 and FW40 families

To **prevent peeling-off,** pos 270 will be heat-sealed onto pos 200 (becomes part of 200) instead of sticking-on by self-adhesive. The complete pos 200 will be available under existing codes except the undermentioned. Old cabinets can still be use together with pos 270.

Change Pos 200 to 4822 426 51628 (FW20/37),
Pos 200 to 4822 426 51627 (FW30/37),
Pos 200 to 4822 426 51629 (FW40/37) and
Delete pos 270.

During production around wk9216/wk9217 a wrong kind of grease was used for the CD mechanism and tray. The result is sets with **noisy gear and rubbing sound while opening the CD tray.** This problem is found in the FW30 series at this moment.
To resolved this problem apply grease 4822 390 20139 evenly onto the areas indicated in the enclosed greasing drawing.

FW20 and FW30 families

To **improve muting circuit response** do the following on the Tape deck board.

Change 3679 from 18kΩ to 68kΩ 4822 116 52297.

To **improve set reliability** do the following on the power board.

Change 1303 from T630mA to T1A 250V 4822 071 51002 and
1304 from T630mA to T1A 250V 4822 071 51002.

FW30 and FW40 families

To **improve recording current characteristics** do the following on the Tape deck board.

Change 2665 from 470pF to 220pF 4822 122 10466,
2666 from 470pF to 220pF 4822 122 10466,
2667 from 470pF to 220pF 4822 122 10466,
2668 from 470pF to 220pF 4822 122 10466,
2779 from 820pF to 560pF 4822 122 10459,
2780 from 820pF to 560pF 4822 122 10459,
2785 from 1nF to 470pF 4822 126 11595,
2786 from 1nF to 470pF 4822 126 11595 and
delete 2791 and 2792.

To **improve Ferro frequency response** do the following on the Tape deck board.

Change 2705 from 10nF to 12nF 4822 121 41935,
2706 from 10nF to 12nF 4822 121 41935,
2725 from 10nF to 12nF 4822 121 41935,
2726 from 10nF to 12nF 4822 121 41935,
3709 from 2.2kΩ to 3.3kΩ 4822 116 52269,
3710 from 2.2kΩ to 3.3kΩ 4822 116 52269,
3729 from 2.2kΩ to 3.3kΩ 4822 116 52269 and
3730 from 2.2kΩ to 3.3kΩ 4822 116 52269.

For **DSC temperature improvement** do the following on th Combi board.

Change 2560 type to 22nF polcap 4822 121 43144 and
2561 type to 22nF polcap 4822 121 43144.

FW20 families

To **improve recording current characteristics** do the followin on the Tape deck board.

Change 2663 from 680pF to 560pF 4822 122 10459,
2664 from 680pF to 560pF 4822 122 10459,
2779 from 820pF to 560pF 4822 122 10459,
2780 from 820pF to 560pF 4822 122 10459,
2785 from 1nF to 470pF 4822 126 11595,
2786 from 1nF to 470pF 4822 126 11595 and
delete 2791 and 2792.

To **improve Ferro frequency response** do the following on th Tape deck board.

Change 2705 from 10nF to 12nF 4822 121 41935,
2706 from 10nF to 12nF 4822 121 41935,
2725 from 10nF to 12nF 4822 121 41935,
2726 from 10nF to 12nF 4822 121 41935,
3655 from 10kΩ to 12kΩ 4822 116 52238,
3656 from 10kΩ to 12kΩ 4822 116 52238,
3709 from 2.2kΩ to 3.3kΩ 4822 116 52269,
3710 from 2.2kΩ to 3.3kΩ 4822 116 52269,
3729 from 2.2kΩ to 3.3kΩ 4822 116 52269,
3730 from 2.2kΩ to 3.3kΩ 4822 116 52269,
3743 from 12kΩ to 10kΩ 4822 116 52233 and
3744 from 12kΩ to 10kΩ 4822 116 52233.

FW40 families

To **improve set reliability for -/37 version** do the following c the power board.

Change 1301 from T5A to T6.3A 250V 4822 252 51123 an
1302 from T5A to T6.3A 250V 4822 252 51123.

To **match resonance capacitor to the Tape head** do th following on the Tape deck board.

Change 2719 from 1nF to 820pF 4822 126 10178 and
2720 from 1nF to 820pF 4822 126 10178.

The following changes are necessary for cost saving an standardisation:

FW20, FW30 and FW40 families

For **cost saving** do the following on the power board.

Delete 2320 to 2322,
2325 to 2326,
2329 and
2331 to 2335.

For **process and fall-off improvement** do the following on th Combi board.

Change 6550 type to 4822 130 82978 LT L-16KPE-P.

FW20 and FW30 families

Due to **cost saving** pos 102 is deleted.

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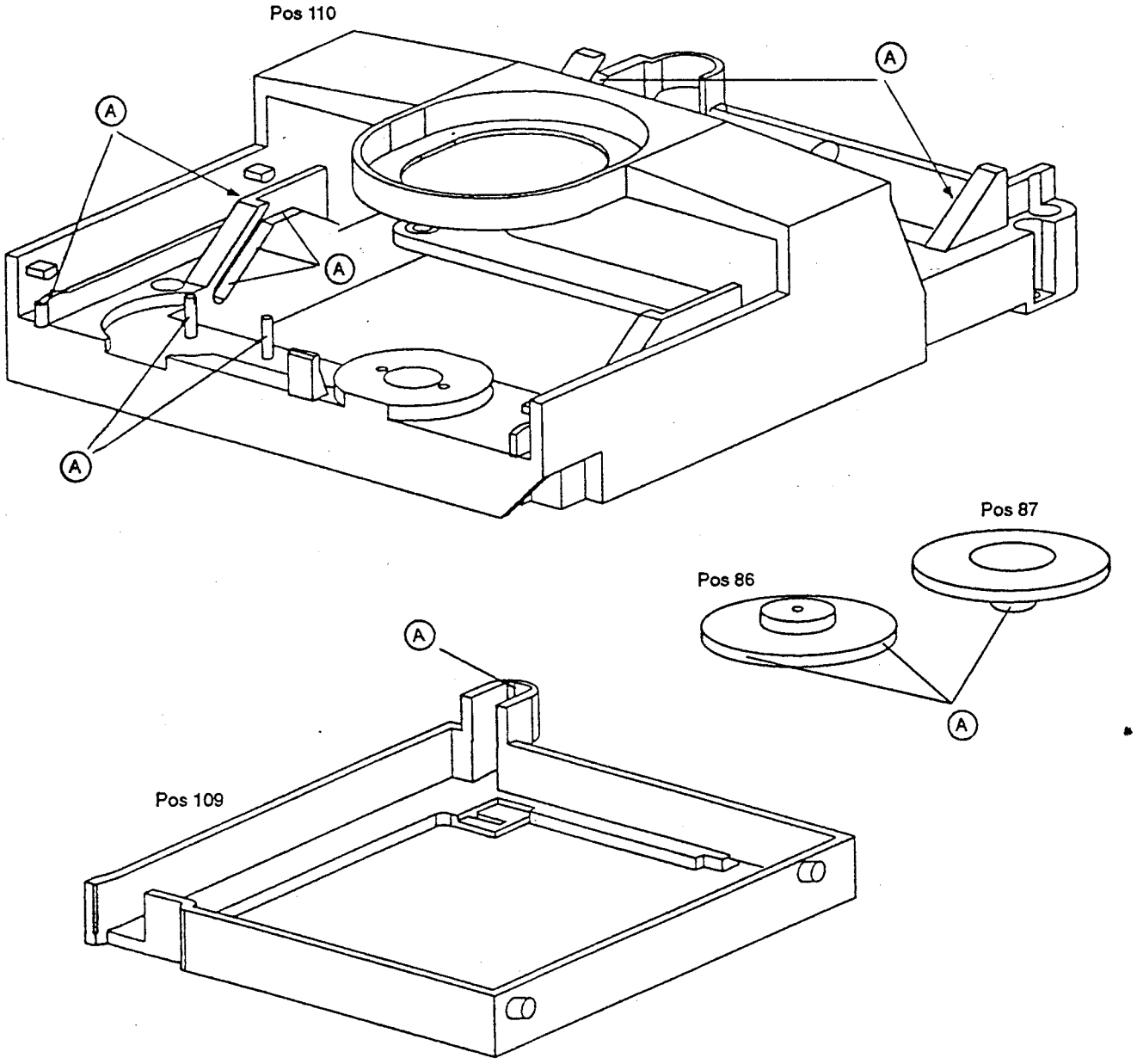
D TRAY GREASE DIAGRAM



Type of grease:

(A) = 4822 390 20139

CD BOARD ELECTRICAL PARTLIST

6103	4822 130 30621	1N4148
6550	4822 130 31981	BZX79-C3V9
6660	4822 130 34173	BZX79-C5V6
7000	4822 209 31064	TDA1301T/N1
7040	4822 130 60887	BF840
7041	5322 130 41982	BC848B
7042	5322 130 41983	BC858B
7043	5322 130 41982	BC848B
7044	5322 130 41982	BC848B
7060	4822 209 72587	TCA0372DP2
7080	4822 209 72587	TCA0372DP2
7101	4822 209 63925	FCB61C65L-70T
7102	4822 209 30388	SAA7341GP
7140	5322 130 42012	BC858
7141	4822 130 61207	BC848
7300	4822 209 83274	NJM4560D
7301	4822 209 83274	NJM4560D
7360	4822 130 42804	BC817-25
7361	4822 130 42804	BC817-25
7362	5322 130 42012	BC858
7500	4822 209 71579 ⚠	TY40408
7550	5322 130 42012	BC858
7660	4822 209 72587	TCA0372DP2
7700	4822 209 31055	MC68HC05C8-188 S15

NOTE: ONLY THE MENTIONED PARTS ARE NORMAL SERVICE PARTS

MISCELLANEOUS ELECTRICAL PARTLIST

MISCELLANEOUS

1021	4822 691 20765	Tape Mech. CWA409RR
	4822 445 10319	Loudspeaker Box -/37
	4822 445 10322	Loudspeaker Box
	4822 218 10466	Remote control

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les piéces de rechange identiques à celles spécifiées.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

(S) Varning!

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(SF) Varo!

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen!

TUNER BOARD ELECTRICAL PARTLIST

2151	5322 122 34099	470pF 10% 63V
2152	4822 124 40242	1µF 20% 63V
2153	5322 122 34099	470pF 10% 63V
2154	5322 122 32481	15pF 5% 50V
2155	5322 122 32965	18pF 5% 50V
2156	4822 124 40433	47µF 20% 25V
2158	5322 126 10223	4.7nF 10% 63V
2159	5322 126 10223	4.7nF 10% 63V
2160	4822 124 41631	1.5µF 50V
2161	4822 122 32927	220nF
2162	4822 122 10166	22nF 30% 16V
2165	4822 124 40433	47µF 20% 25V
2196	5322 122 32448	10pF 5% 50V except -/21/37
2197	4822 122 33804	27pF 5% 50V -/21/37
2210	4822 124 41643	100µF 20% 16V
2215	5322 122 32268	470pF 10% 50V -/22
2216	5322 122 32268	470pF 10% 50V -/22
2219	4822 122 32927	220nF
2221	5322 122 32268	470pF 10% 50V -/22
2222	5322 122 32268	470pF 10% 50V except -/22
2223	4822 122 32927	220nF except -/22
2224	4822 122 32575	220pF 10% 500V
2225	4822 122 32575	220pF 10% 500V

3100	4822 050 21501 ⚠	150Ω 1% 0.6W
3101	4822 050 21501 ⚠	150Ω 1% 0.6W
3102	4822 051 20224	220k 5% 0.1W -/22
3103	4822 051 20008	0Ω 5% 0.1W except -/22
3104	4822 051 20154	150k 5% 0.1W -/22
3104	4822 051 20008	0Ω 5% 0.1W
3105	4822 051 20562	5k6 5% 0.1W
3106	4822 051 20829	82Ω 5% 0.1W
3107	4822 051 20104	100k 5% 0.1W
3108	4822 050 24701 ⚠	470Ω 1% 0.6W
3113	4822 053 10221 ⚠	220Ω 5% 1W
3114	4822 051 20472	4k7 5% 0.1W
3115	4822 051 20391	390Ω 5% 0.1W
3116	4822 051 20478	4Ω7 5% 0.1W
3117	4822 051 20331	330Ω 5% 0.1W
3118	4822 116 52215 ⚠	220Ω 5% 0.5W
3120	4822 052 10339 ⚠	33Ω 5% 0.33W
3121	4822 051 20272	2k7 5% 0.1W
3122	4822 051 20562	5k6 5% 0.1W
3123	4822 051 20223	22k 5% 0.1W
3124	4822 051 20103	10k 5% 0.1W
3125	4822 100 11213	Trimmer 22k 30%
3126	4822 051 20123	12k 5% 0.1W
3127	4822 051 20562	5k6 5% 0.1W
3128	4822 051 20562	5k6 5% 0.1W
3129	4822 051 20103	10k 5% 0.1W
3131	4822 100 11319	Trimmer 4k7

3132	4822 051 20103	10k 5% 0.1W
3133	4822 051 20008	0Ω 5% 0.1W
3134	4822 050 15602	5k6 1% 0.4W
3135	4822 051 10008	0Ω 5% 0.25W
3140	4822 051 20821	820Ω 5% 0.1W except -/21/37
3141	4822 051 20182	1k8 5% 0.1W except -/21/37
3142	4822 051 20472	4k7 5% 0.1W except -/21/37
3143	4822 051 20821	820Ω 5% 0.1W
3144	4822 051 20331	330Ω 5% 0.1W
3145	4822 051 20271	270Ω 5% 0.1W
3146	4822 053 10151 ⚠	150Ω 5% 1W
3147	4822 050 15602	5k6 1% 0.4W
3148	4822 051 20104	100k 5% 0.1W
3149	4822 051 20472	4k7 5% 0.1W except -/21/37
3150	4822 050 25601 ⚠	560Ω 1% 0.6W except -/21/37
3151	4822 050 24702	4k7 1% 0.6W except -/21/37
3152	4822 051 20103	10k 5% 0.1W except -/21/37
3153	4822 051 20008	0Ω 5% 0.1W -/21/37
3154	4822 051 20008	0Ω 5% 0.1W -/21/37
3155	4822 050 22201 ⚠	220Ω 1% 0.6W
3156	4822 051 20153	15k 5% 0.1W
3157	4822 051 20472	4k7 5% 0.1W
3158	4822 050 24702	4k7 1% 0.6W
3159	4822 051 20104	100k 5% 0.1W
3160	4822 051 20104	100k 5% 0.1W
3162	4822 050 23901 ⚠	390Ω 1% 0.6W
3163	4822 051 20103	10k 5% 0.1W
3164	4822 051 20473	47k 5% 0.1W
3165	4822 050 21002	1k 1% 0.6W
3166	4822 050 21002	1k 1% 0.6W
3167	4822 050 21002	1k 1% 0.6W
3170	4822 051 20223	22k 5% 0.1W
3171	4822 051 20103	10k 5% 0.1W
3172	4822 051 20472	4k7 5% 0.1W
3173	4822 051 20223	22k 5% 0.1W
3183	4822 050 21003	10k 1% 0.6W
3184	4822 051 20332	3k3 5% 0.1W
3185	4822 051 20103	10k 5% 0.1W
3186	4822 050 21003	10k 1% 0.6W
3187	4822 051 20103	10k 5% 0.1W
3190	4822 051 20479	47Ω 5% 0.1W
3194	4822 051 20472	4k7 5% 0.1W
3196	4822 051 20008	0Ω 5% 0.1W
3197	4822 051 20008	0Ω 5% 0.1W
3198	4822 051 20103	10k 5% 0.1W
3200	4822 051 20008	0Ω 5% 0.1W
3202	4822 051 20008	0Ω 5% 0.1W
3223	4822 051 20474	470k 5% 0.1W
3225	4822 050 21002	1k 1% 0.6W
3230	4822 051 20223	22k 5% 0.1W
3231	4822 051 20223	22k 5% 0.1W
3233	4822 051 10102	1k 2% 0.25W
3236	4822 051 20008	0Ω 5% 0.1W

3240	4822 051 20182	1k8 5% 0.1W except -/21/37
3241	4822 051 20008	0Ω 5% 0.1W except -/21/37

5101	4822 157 53192	0.22µH 20%
5104	4822 157 63029	IFT AM
5105	4822 157 63904	Det Coil
5106	4822 157 63802	Birdy Filter
5107	4822 157 63799	MW Aerial Coil
5107	4822 157 63835	MW Aerial Coil -/21/37
5108	4822 157 63836	AM Osc -/21/37
5108	4822 157 63912	AM Osc
5109	4822 157 63801	LW Aerial Coil except -21/37
5114	4822 152 20699	560µH

6101	4822 130 34174	BZX79-C4V7
6102	4822 130 83075	HN1V02H
6109	4822 130 30621	1N4148
6121	4822 130 30621	1N4148 -/37
6122	4822 130 30621	1N4148 -/21
6123	4822 130 30621	1N4148 -/37

7101	4822 130 60163	2SC1047
7103	4822 209 31001	LA1851N
7104	5322 130 60068	BC558C
7105	4822 209 30178	LC7218
7106	5322 130 60068	BC558C
7107	5322 130 41982	BC848B
7108	4822 130 44196	BC548C
7109	4822 130 44196	BC548C
7110	5322 130 44779	BC338-40 except -/21/37
7111	5322 130 41982	BC848B except -/21/37
7112	4822 130 60163	2SC1047 except -/21/37
7113	4822 130 44196	BC548C except -/21/37
7114	5322 130 44779	BC338-40 except -/21/37
7115	4822 130 41024	BF245B
7116	4822 130 60163	2SC1047
7119	5322 130 41983	BC858B
7120	4822 130 44196	BC548C
7150	5322 130 44779	BC338-40
7157	5322 130 44779	BC338-40

NOTE : ONLY THE MENTIONED PARTS ARE NORMAL SERVICE PARTS.

CD BOARD ELECTRICAL PARTLIST

MISCELLANEOUS

1002	4822 242 73557	Cer Res 8.46MHz
1020	4822 071 51601 ⚠	Fuse 160mA 250V
1021	4822 071 51601 ⚠	Fuse 160mA 250V
1570	4822 242 81151	X'tal Res 16.9344kHz
1700	4822 242 72527	Cer Res 4MHz

2000	5322 122 31865	1.5nF 10% 63V
2001	5322 116 80853	560pF 5% 63V
2003	4822 122 32575	220pF 10% 500V
2004	4822 122 32575	220pF 10% 500V
2005	4822 122 32575	220pF 10% 500V
2006	4822 122 32575	220pF 10% 500V
2007	4822 122 32575	220pF 10% 500V
2008	4822 122 32575	220pF 10% 500V
2009	4822 122 33496	100nF 10% 63V
2010	5322 124 21643	22µF 20% 40V
2011	4822 122 33496	100nF 10% 63V
2012	4822 124 40272	33µF 20% 16V
2015	5322 124 21643	22µF 20% 40V
2016	4822 122 33496	100nF 10% 63V
2017	5322 124 21643	22µF 20% 40V
2018	4822 122 33496	100nF 10% 63V
2019	4822 122 33809	22nF 20% 50V
2040	5322 122 32654	22nF 10% 63V
2041	4822 126 10326	180pF
2042	5322 124 21643	22µF 20% 40V
2043	5322 122 31863	330pF 5% 50V
2044	4822 126 10326	180pF
2045	5322 122 32452	47pF 5% 63V
2046	5322 122 32452	47pF 5% 63V
2047	5322 122 32531	100pF 5% 50V
2048	5322 122 32965	18pF 5% 50V
2049	4822 126 10326	180pF
2050	4822 126 10326	180pF
2051	5322 122 31863	330pF 5% 50V
2052	5322 124 21643	22µF 20% 40V
2060	4822 122 33496	100nF 10% 63V
2061	4822 122 33496	100nF 10% 63V
2062	4822 124 40272	33µF 20% 16V
2063	4822 124 40272	33µF 20% 16V
2064	4822 122 33342	33nF 10% 63V
2065	4822 122 33496	100nF 10% 63V
2066	4822 122 33175	2.2nF 20% 50V
2070	5322 126 10223	4.7nF 10% 63V
2071	4822 122 33496	100nF 10% 63V
2072	4822 126 10326	180pF
2080	4822 122 33496	100nF 10% 63V
2081	5322 124 21643	22µF 20% 40V
2082	4822 122 33496	100nF 10% 63V
2083	5322 124 21643	22µF 20% 40V
2084	4822 126 10326	180pF

CD BOARD ELECTRICAL PARTLIST

2085	4822 122 33496	100nF 10% 63V
2086	5322 126 10465	3.9nF 10% 63V
2101	5322 122 32452	47pF 5% 63V
2102	4822 122 33175	2.2nF 20% 50V
2103	4822 124 40849	330µF 20% 16V
2104	4822 122 33496	100nF 10% 63V
2105	5322 121 42661	330nF 5% 63V
2106	4822 122 33496	100nF 10% 63V
2107	4822 124 41584	100µF 20% 10V
2108	4822 122 33809	22nF 20% 50V
2109	4822 124 40242	1µF 20% 63V
2110	5322 122 32659	33pF 5% 50V
2111	5322 121 42386	100nF 5% 63V
2112	4822 122 33496	100nF 10% 63V
2114	5322 122 32658	22pF 5% 50V
2115	5322 122 32658	22pF 5% 50V
2116	4822 124 40242	1µF 20% 63V
2117	5322 126 10223	4.7nF 10% 63V
2118	5322 126 10223	4.7nF 10% 63V
2119	4822 124 41584	100µF 20% 10V
2120	4822 122 33496	100nF 10% 63V
2121	4822 122 33496	100nF 10% 63V
2122	4822 124 40849	330µF 20% 16V
2123	4822 122 33496	100nF 10% 63V
2124	5322 122 32659	33pF 5% 50V
2125	5322 126 10223	4.7nF 10% 63V
2140	4822 122 33496	100nF 10% 63V
2141	4822 122 32542	47nF 10% 63V
2300	5322 122 31863	330pF 5% 50V
2301	4822 124 40272	33µF 20% 16V
2302	4822 124 40246	4.7µF 20% 63V
2303	4822 122 33216	270pF 5% 50V
2304	4822 124 40272	33µF 20% 16V
2305	4822 124 40246	4.7µF 20% 63V
2306	4822 122 33496	100nF 10% 63V
2309	4822 122 33216	270pF 5% 50V
2310	5322 122 31863	330pF 5% 50V
2311	4822 124 40246	4.7µF 20% 63V
2312	4822 122 33219	1.8nF 10% 50V
2313	4822 122 33219	1.8nF 10% 50V
2500	4822 124 80148	2200µF 20% 16V
2501	4822 122 33496	100nF 10% 63V
2502	4822 124 41853	1000µF 16V
2503	4822 122 33496	100nF 10% 63V
2504	4822 122 33496	100nF 10% 63V
2550	4822 122 33175	2.2nF 20% 50V
2610	4822 122 33496	100nF 10% 63V
2611	4822 122 33496	100nF 10% 63V
2612	4822 122 33496	100nF 10% 63V
2702	4822 124 40272	33µF 20% 16V
2703	4822 122 33809	22nF 20% 50V
2704	4822 122 33175	2.2nF 20% 50V

3000	4822 050 21003	10k 1% 0.6W
3001	4822 050 21003	10k 1% 0.6W
3002	4822 050 21003	10k 1% 0.6W
3003	4822 050 21003	10k 1% 0.6W
3004	4822 050 21003	10k 1% 0.6W
3005	4822 050 21003	10k 1% 0.6W
3006	4822 051 20103	10k 5% 0.1W
3007	4822 052 10338 ⚠	3Ω3 5% 0.33W
3008	4822 052 10338 ⚠	3Ω3 5% 0.33W
3009	4822 051 20105	1M 5% 0.1W
3010	4822 051 20103	10k 5% 0.1W
3011	4822 051 20103	10k 5% 0.1W
3012	4822 051 10102	1k 2% 0.25W
3013	4822 051 10102	1k 2% 0.25W
3014	4822 052 10478 ⚠	4Ω7 5% 0.33W
3015	4822 050 21002	1k 1% 0.6W
3016	4822 050 21002	1k 1% 0.6W
3017	4822 051 10102	1k 2% 0.25W
3040	4822 051 10101	100Ω 2% 0.25W
3041	4822 051 20393	39k 5% 0.1W
3042	4822 051 20334	330k 5% 0.1W
3043	4822 051 20303	30k 5% 0.1W
3044	4822 051 10102	1k 2% 0.25W
3045	4822 051 20101	100Ω 5% 0.1W
3046	4822 051 10102	1k 2% 0.25W
3047	4822 051 20434	430k 5% 0.1W
3048	4822 051 20101	100Ω 5% 0.1W
3049	4822 050 24301	430Ω 1% 0.6W
3050	4822 051 20434	430k 5% 0.1W
3051	4822 051 20182	1k8 5% 0.1W
3052	4822 051 20182	1k8 5% 0.1W
3053	4822 051 20362	3k6 5% 0.1W
3054	4822 051 20101	100Ω 5% 0.1W
3055	4822 051 20124	120k 5% 0.1W
3056	4822 050 21204	120k 1% 0.6W
3057	4822 050 25603	56k 1% 0.6W
3058	4822 050 21002	1k 1% 0.6W
3060	4822 051 20103	10k 5% 0.1W
3061	4822 051 20682	6k8 5% 0.1W
3062	4822 116 52244	15k 5% 0.5W
3063	4822 051 20103	10k 5% 0.1W
3064	4822 116 52244	15k 5% 0.5W
3065	4822 052 10229 ⚠	22Ω 5% 0.33W
3066	4822 052 10108 ⚠	1Ω 5% 0.33W
3067	4822 052 10108 ⚠	1Ω 5% 0.33W
3070	4822 051 20153	15k 5% 0.1W
3071	4822 051 20103	10k 5% 0.1W
3072	4822 050 26802	6k8 1% 0.6W
3073	4822 052 10229 ⚠	22Ω 5% 0.33W
3074	4822 116 52244	15k 5% 0.5W
3075	4822 050 21003	10k 1% 0.6W
3080	4822 051 20682	6k8 5% 0.1W
3081	4822 050 24702	4k7 1% 0.6W

3082	4822 051 20153	15k 5% 0.1W
3085	4822 050 21003	10k 1% 0.6W
3086	4822 052 10229 ⚠	22Ω 5% 0.33W
3087	4822 116 52244	15k 5% 0.5W
3100	4822 050 22202	2k2 1% 0.6W
3101	4822 051 20223	22k 5% 0.1W
3102	4822 051 20223	22k 5% 0.1W
3103	4822 052 10338 ⚠	3Ω3 5% 0.33W
3105	4822 052 10338 ⚠	3Ω3 5% 0.33W
3106	4822 051 10102	1k 2% 0.25W
3109	4822 051 20222	2k2 5% 0.1W
3110	4822 051 20224	220k 5% 0.1W
3111	4822 052 10229 ⚠	22Ω 5% 0.33W
3112	4822 050 22205	2M2 1% 0.6W
3117	4822 051 20182	1k8 5% 0.1W
3118	4822 051 20182	1k8 5% 0.1W
3119	4822 051 10561	560Ω 2% 0.25W
3140	4822 116 52234	100k 5% 0.5W
3141	4822 051 20104	100k 5% 0.1W
3142	4822 050 24703	47k 1% 0.6W
3143	4822 052 10229 ⚠	22Ω 5% 0.33W
3144	4822 051 20223	22k 5% 0.1W
3146	4822 050 21003	10k 1% 0.6W
3147	4822 051 20392	3k9 5% 0.1W
3148	4822 051 20473	47k 5% 0.1W
3300	4822 051 20223	22k 5% 0.1W
3301	4822 051 20153	15k 5% 0.1W
3302	4822 051 20332	3k3 5% 0.1W
3303	4822 050 21803	18k 1% 0.6W
3304	4822 051 20123	12k 5% 0.1W
3305	4822 052 10229 ⚠	22Ω 5% 0.33W
3306	4822 052 10229 ⚠	22Ω 5% 0.33W
3307	4822 051 20332	3k3 5% 0.1W
3308	4822 051 20123	12k 5% 0.1W
3309	4822 051 20223	22k 5% 0.1W
3310	4822 051 20153	15k 5% 0.1W
3311	4822 051 20183	18k 5% 0.1W
3312	4822 050 22203	22k 1% 0.6W
3313	4822 051 20223	22k 5% 0.1W
3314	4822 050 21002	1k 1% 0.6W
3315	4822 050 21002	1k 1% 0.6W
3320	4822 116 83933	15k 1% 0.1W
3321	4822 116 83933	15k 1% 0.1W
3322	4822 116 83933	15k 1% 0.1W
3323	4822 116 83933	15k 1% 0.1W
3325	4822 116 83933	15k 1% 0.1W
3326	4822 116 83933	15k 1% 0.1W
3327	4822 116 83933	15k 1% 0.1W
3328	4822 116 83933	15k 1% 0.1W
3360	4822 051 10102	1k 2% 0.25W
3361	4822 051 10102	1k 2% 0.25W
3501	4822 052 10108 ⚠	1Ω 5% 0.33W
3502	4822 052 10108 ⚠	1Ω 5% 0.33W

3550	4822 051 20561	560Ω 5% 0.1W
3551	4822 051 10102	1k 2% 0.25W
3552	4822 051 20223	22k 5% 0.1W
3553	4822 051 10102	1k 2% 0.25W
3610	4822 051 20123	12k 5% 0.1W
3611	4822 116 52303	8k2 5% 0.5W
3612	4822 051 20123	12k 5% 0.1W
3613	4822 051 20123	12k 5% 0.1W
3614	4822 051 20123	12k 5% 0.1W
3615	4822 052 10108 ⚠	1Ω 5% 0.33W
3616	4822 052 10108 ⚠	1Ω 5% 0.33W
3617	4822 052 10229 ⚠	22Ω 5% 0.33W
3662	4822 051 20103	10k 5% 0.1W
3663	4822 051 20103	10k 5% 0.1W
3664	4822 051 20103	10k 5% 0.1W
3665	4822 051 20561	560Ω 5% 0.1W
3700	4822 051 20224	220k 5% 0.1W
3701	4822 052 10338 ⚠	3Ω3 5% 0.33W
3706	4822 051 20103	10k 5% 0.1W
3707	4822 051 20103	10k 5% 0.1W
3708	4822 051 20103	10k 5% 0.1W
3710	4822 051 20103	10k 5% 0.1W
3711	4822 051 20332	3k3 5% 0.1W
3713	4822 051 20103	10k 5% 0.1W
3714	4822 051 20103	10k 5% 0.1W
3715	4822 051 20332	3k3 5% 0.1W
3716	4822 051 20103	10k 5% 0.1W
3717	4822 051 20103	10k 5% 0.1W
3718	4822 051 20103	10k 5% 0.1W
3719	4822 051 20103	10k 5% 0.1W
3720	4822 051 20103	10k 5% 0.1W
3721	4822 051 20103	10k 5% 0.1W
3722	4822 051 10102	1k 2% 0.25W
3723	4822 051 10102	1k 2% 0.25W
3724	4822 051 10102	1k 2% 0.25W
4000	4822 051 10008	0Ω 5% 0.25W
4001	4822 051 10008	0Ω 5% 0.25W
4002	4822 051 10008	0Ω 5% 0.25W
4003	4822 051 10008	0Ω 5% 0.25W
4004	4822 051 10008	0Ω 5% 0.25W
4104	4822 051 10008	0Ω 5% 0.25W
4105	4822 051 10008	0Ω 5% 0.25W
4106	4822 051 10008	0Ω 5% 0.25W
4107	4822 051 10008	0Ω 5% 0.25W
4108	4822 051 10008	0Ω 5% 0.25W
4109	4822 051 10008	0Ω 5% 0.25W
4200	4822 051 10008	0Ω 5% 0.25W
4302	4822 051 10008	0Ω 5% 0.25W
4600	4822 051 10008	0Ω 5% 0.25W
4700	4822 051 10008	0Ω 5% 0.25W
4701	4822 051 10008	0Ω 5% 0.25W

TAPE CORE BOARD ELECTRICAL PARTLIST

3723	4822 116 52265	270k 5% 0.5W
3724	4822 116 52265	270k 5% 0.5W
3725	4822 116 52238	12k 5% 0.5W
3726	4822 116 52238	12k 5% 0.5W
3727	4822 116 52195	47Ω 5% 0.5W
3728	4822 116 52195	47Ω 5% 0.5W
3729	4822 116 52256	2k2 5% 0.5W
3730	4822 116 52256	2k2 5% 0.5W
3731	4822 116 52269	3k3 5% 0.5W
3732	4822 116 52269	3k3 5% 0.5W
3733	4822 116 52224	470Ω 5% 0.5W
3734	4822 116 52284	47k 5% 0.5W
3735	4822 050 11002	1k 1% 0.4W
3736	4822 116 52234	100k 5% 0.5W
3737	4822 116 52269	3.3k 5% 0.5W
3738	4822 116 52269	3.3k 5% 0.5W
3739	4822 116 52269	3.3k 5% 0.5W
3740	4822 116 52269	3.3k 5% 0.5W
3741	4822 116 52269	3.3k 5% 0.5W
3742	4822 116 52269	3.3k 5% 0.5W
3743	4822 116 52303	8k2 5% 0.5W
3744	4822 116 52303	8k2 5% 0.5W
3745	4822 116 52231	820Ω 5% 0.5W
3746	4822 116 52231	820Ω 5% 0.5W
3747	4822 116 52224	470Ω 5% 0.5W
3748	4822 116 52283	4k7 5% 0.5W
3749	4822 050 11002	1k 1% 0.4W
3750	4822 050 11002	1k 1% 0.4W
3751	4822 116 52233	10k 5% 0.5W
3752	4822 116 52257	22k 5% 0.5W
3753	4822 116 52283	4k7 5% 0.5W
3754	4822 116 52207	1k2 5% 0.5W
3755	4822 116 52233	10k 5% 0.5W
3756	4822 100 11771	Trimmer 20k 30%
3757	4822 052 10478 ⚠	4Ω7 5% 0.33W
3758	4822 116 52191	33Ω 5% 0.5W
3759	4822 116 52296	6k8 5% 0.5W
3760	4822 116 52182	15Ω 5% 0.5W
3761	4822 116 52176	10Ω 5% 0.5W
3762	4822 116 52176	10Ω 5% 0.5W
3763	5322 100 11539	Trimmer 100k 30%
3764	5322 100 11539	Trimmer 100k 30%
3765	4822 116 52283	4k7 5% 0.5W
3766	4822 116 52256	2k2 5% 0.5W
3768	4822 116 52233	10k 5% 0.5W
3769	4822 116 52224	470Ω 5% 0.5W
3770	4822 116 52219	330Ω 5% 0.5W
3771	4822 050 11002	1k 1% 0.4W
3772	4822 050 11002	1k 1% 0.4W
3773	4822 050 11002	1k 1% 0.4W
3774	4822 051 10333	33k 2% 0.25W
3775	4822 116 52238	12k 5% 0.5W
3777	4822 116 52175	100Ω 5% 0.5W
3778	4822 116 52175	100Ω 5% 0.5W
3779	4822 116 52251	18k 5% 0.5W
3780	4822 116 52251	18k 5% 0.5W
3782	4822 116 52269	3k3 5% 0.5W
3783	4822 116 52284	47k 5% 0.5W
3784	4822 116 52284	47k 5% 0.5W
3785	4822 116 52234	100k 5% 0.5W
3786	4822 116 52234	100k 5% 0.5W
3787	5322 100 11542	Trimmer 4k7 30%
3791	4822 050 11002	1k 1% 0.4W
3794	4822 116 52283	4k7 5% 0.5W
3795	4822 116 52283	4k7 5% 0.5W
3796	5322 100 11542	Trimmer 4k7 30%
3797	4822 116 52296	6k8 5% 0.5W
3798	4822 116 52238	12k 5% 0.5W
3799	4822 116 52303	8k2 5% 0.5W
3800	4822 052 10159 ⚠	15Ω 5% 0.33W
3803	4822 116 52283	4k7 5% 0.5W
3804	4822 116 52215	220Ω 5% 0.5W
3805	4822 050 11002	1k 1% 0.4W

5635	4822 242 73768	Low pass filter
5636	4822 242 73768	Low pass filter
5673	4822 156 20811	36µH 5%
5674	4822 156 20811	36µH 5%
5760	4822 156 20946	Osc coil 100kHz

6670	4822 130 30621	1N4148
6671	5322 130 30684	1N4002
6672	5322 130 30684	1N4002
6673	4822 130 34173	BZX79-C5V6

7635	4822 209 30498	HA12134A
7636	4822 209 31518	MN15542LD
7637	5322 130 44779	BC338-40
7641	4822 130 44196	BC548C
7642	4822 130 44196	BC548C
7653	4822 130 60588	DTC114ES
7654	4822 130 60588	DTC114ES
7655	4822 130 41327	BC327-40
7682	4822 130 60588	DTC114ES
7683	4822 130 60588	DTC114ES
7684	4822 130 60588	DTC114ES
7685	4822 130 60588	DTC114ES
7689	4822 130 60588	DTC114ES
7690	4822 130 44196	BC548C
7691	4822 130 60588	DTC114ES
7692	4822 130 44196	BC548C
7693	4822 130 44196	BC548C
7694	4822 130 41327	BC327-40
7695	4822 130 44196	BC548C
7696	4822 130 41327	BC327-40
7697	4822 130 44196	BC548C
7698	4822 130 41327	BC327-40
7700	4822 209 70288	UPC1313HA
7701	4822 209 70288	UPC1313HA
7702	5322 209 14865	MC14066BCP
7703	5322 209 14865	MC14066BCP
7704	4822 209 61667	UPC1330HA
7750	4822 130 41344	BC337-40
7751	4822 130 42682	DTA144ES
7752	4822 130 44196	BC548C
7753	4822 130 60588	DTC114ES
7754	4822 130 44196	BC548C
7760	4822 130 41344	BC337-40
7763	4822 130 42682	DTA144ES
7764	4822 130 60588	DTC114ES
7765	4822 130 60588	DTC114ES
7768	4822 130 44196	BC548C
7770	4822 209 31505	CXA1298AP
7782	4822 130 60588	DTC114ES
7783	4822 130 60588	DTC114ES
7784	4822 130 60588	DTC114ES

NOTE: ONLY THE MENTIONED PARTS ARE NORMAL SERVICE PARTS

TUNER BOARD ELECTRICAL PARTLIST

MISCELLANEOUS

1101	4822 210 10491	Tuner Unit FEE337-A05
1101	4822 210 10492	Tuner Unit FE415-G11 -/22
1110	4822 267 10283	FM Ant Socket
1111	4822 267 31505	AM Ant Socket
5103	4822 242 81249	Cer Filter 10.7MHz
5110	4822 242 71878	Cer Filter 450kHz
5111	4822 242 81248	Cer Res 19kHz
5112	4822 242 72976	X'Tal Res 7.2MHz
5113	4822 242 81249	Cer Filter 10.7MHz

2101	5322 122 34099	470pF 10% 63V
2102	5322 122 32268	470pF 10% 50V -/22
2103	4822 124 40433	47µF 20% 25V
2104	4822 121 42408	220nF 5% 63V
2105	5322 122 32965	18pF 5% 50V
2105	5322 122 32287	4.7pF 5% 50V -/22
2107	4822 122 31385	22pF 50V -/22
2107	4822 122 10225	82pF 5% 50V
2108	5322 122 32654	22nF 10% 63V
2109	5322 122 32654	22nF 10% 63V
2110	5322 122 32654	22nF 10% 63V
2112	5322 122 32654	22nF 10% 63V
2113	5322 122 32661	56pF 5% 50V
2114	5322 124 41431	22µF 20% 35V
2115	4822 124 40239	0.47µF 20% 63V
2116	5322 121 42386	100nF 5% 63V
2117	4822 121 41935	12nF 5% 250V
2117	4822 121 43179	18nF 5% 250V -/37
2118	4822 121 43179	18nF 5% 250V -/37
2118	4822 121 41935	12nF 5% 250V
2119	4822 124 40244	2.2µF 20% 63V
2120	4822 124 40244	2.2µF 20% 63V
2121	4822 124 40196	220µF 20% 16V
2123	4822 124 40246	4.7µF 20% 63V
2124	4822 124 40246	4.7µF 20% 63V
2125	4822 122 33177	10nF 20% 50V
2126	4822 122 31782	15000pF 10% 50V
2129	4822 124 40242	1µF 20% 63V
2131	4822 124 40435	10µF 20% 50V
2140	4822 125 60102	Trimmer 30pF except -/21/37
2141	4822 125 60101	Trimmer 10pF
2142	4822 125 60102	Trimmer 30pF except -/21/37
2143	5322 122 32269	6.8pF 5% 50V except -/21/37
2144	4822 121 42408	220nF 5% 63V
2145	4822 121 51381	560pF 5% 400V -/21/37
2145	4822 121 51263	510pF 1% 400V
2146	4822 121 70082	430pF 1% 400V except -/21/37
2147	5322 122 32654	22nF 10% 63V
2148	5322 122 32452	47pF 5% 63V
2149	4822 122 33177	10nF 20% 50V
2150	5322 122 32654	22nF 10% 63V

TAPE CORE BOARD ELECTRICAL PARTLIST

MISCELLANEOUS

5643	4822 242 70831	Resonator 4MHz

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2635	4822 124 41398	1µF 20% 63V
2636	4822 124 41398	1µF 20% 63V
2637	4822 122 33069	33pF 5% 50V
2638	4822 122 33069	33pF 5% 50V
2639	4822 124 41398	1µF 20% 63V
2640	4822 124 41398	1µF 20% 63V
2641	4822 126 10329	68pF 5%
2642	4822 126 10329	68pF 5%
2643	4822 126 12187	22pF 5% 50V
2644	4822 126 12187	22pF 5% 50V
2645	4822 122 10577	3.3nF 10% 16V
2646	4822 122 10577	3.3nF 10% 16V
2647	4822 124 40248	10µF 20% 63V
2648	4822 124 40248	10µF 20% 63V
2649	4822 124 41398	1µF 20% 63V
2650	4822 124 40196	220µF 20% 16V
2651	4822 122 33519	470pF 10% 50V
2652	5322 124 41431	22µF 20% 35V
2653	5322 124 41431	22µF 20% 35V
2654	4822 124 40248	10µF 20% 63V
2655	4822 124 41398	1µF 20% 63V
2656	4822 124 41398	1µF 20% 63V
2657	4822 124 40248	10µF 20% 63V
2658	4822 124 40248	10µF 20% 63V
2659	4822 124 40248	10µF 20% 63V
2660	4822 124 40248	10µF 20% 63V
2661	4822 121 51252	470nF 5% 63V
2662	4822 121 51252	470nF 5% 63V
2663	4822 121 42408	220nF 5% 63V
2664	4822 121 42408	220nF 5% 63V
2665	4822 122 33519	470pF 10% 50V
2666	4822 122 33519	470pF 10% 50V
2667	4822 122 33519	470pF 10% 50V
2668	4822 122 33519	470pF 10% 50V
2669	4822 122 33519	470pF 10% 50V
2670	4822 122 33519	470pF 10% 50V
2673	4822 122 10458	82pF 10% 50V
2674	4822 122 10458	82pF 10% 50V
2675	4822 122 33519	470pF 10% 50V
2676	4822 122 33519	470pF 10% 50V
2680	4822 124 41397	47µF 20% 25V
2683	4822 124 40248	10µF 20% 63V
2684	4822 124 40196	220µF 20% 16V
2685	5322 121 42498	680nF 5% 63V
2699	4822 122 33169	680pF 10% 50V
2700	4822 122 33169	680pF 10% 50V
2701	4822 126 12332	100pF 5% 50V
2702	4822 126 12332	100pF 5% 50V
2703	4822 124 41973	100µF 20% 16V

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2704	4822 124 41973	100µF 20% 16V
2705	4822 121 41815	10nF 10% 100V
2706	4822 121 41815	10nF 10% 100V
2707	4822 126 11585	22nF
2708	4822 126 11585	22nF
2709	4822 124 41398	1µF 20% 63V
2710	4822 124 41398	1µF 20% 63V
2712	4822 122 33519	470pF 10% 50V
2713	4822 124 40196	220µF 20% 16V
2719	4822 122 33169	680pF 10% 50V
2720	4822 122 33169	680pF 10% 50V
2721	4822 126 12332	100pF 5% 50V
2722	4822 126 12332	100pF 5% 50V
2723	4822 124 41973	100µF 20% 16V
2724	4822 124 41973	100µF 20% 16V
2725	4822 121 41815	10nF 10% 100V
2726	4822 121 41815	10nF 10% 100V
2727	4822 126 11585	22nF
2728	4822 126 11585	22nF
2729	4822 124 41398	1µF 20% 63V
2730	4822 124 41398	1µF 20% 63V
2732	4822 122 33519	470pF 10% 50V
2733	4822 124 40196	220µF 20% 16V
2739	4822 126 10781	470pF 50V
2740	4822 122 33519	470pF 10% 50V
2741	4822 124 41973	100µF 20% 16V
2747	4822 124 41973	100µF 20% 16V
2752	4822 124 40433	47µF 20% 25V
2755	4822 124 41398	1µF 20% 63V
2757	4822 124 40433	47µF 20% 25V
2759	4822 126 11714	4.7nF 20%
2760	4822 121 51387	10nF 20% 16V
2762	4822 124 40239	0.47µF 20% 63V
2763	4822 122 33069	33pF 5% 50V
2764	4822 122 33069	33pF 5% 50V
2765	4822 121 41857	10nF 5% 250V
2768	4822 124 41973	100µF 20% 16V
2769	4822 122 33519	470pF 10% 50V
2770	4822 124 40196	220µF 20% 16V
2771	4822 126 11714	4.7nF 20%
2772	4822 126 11714	4.7nF 20%
2773	4822 126 11714	4.7nF 20%
2774	4822 124 80192	4.7µF 20% 63V
2775	4822 124 40433	47µF 20% 25V
2776	4822 124 41398	1µF 20% 63V
2777	4822 124 41398	1µF 20% 63V
2778	4822 124 41398	1µF 20% 63V
2779	4822 126 10178	820pF 10% 50V
2780	4822 126 10178	820pF 10% 50V
2781	4822 126 11585	22nF
2782	4822 126 11585	22nF
2783	4822 124 41398	1µF 20% 63V
2784	4822 124 41398	1µF 20% 63V

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2785	4822 126 11592	1nF 10% 50V
2786	4822 126 11592	1nF 10% 50V
2789	4822 124 42244	4.7µF 20% 63V
2790	4822 124 42244	4.7µF 20% 63V
2791	4822 121 51387	10nF 20% 16V
2792	4822 121 51387	10nF 20% 16V
2800	4822 121 51387	10nF 20% 16V
2801	4822 121 51387	10nF 20% 16V
2814	4822 126 12148	2.7nF 10%
2815	4822 126 12148	2.7nF 10%
2816	4822 126 12148	2.7nF 10%
2837	4822 126 12148	2.7nF 10%
2838	4822 126 12148	2.7nF 10%
2839	4822 126 12148	2.7nF 10%
2840	4822 126 12148	2.7nF 10%
2841	4822 126 12148	2.7nF 10%
2842	4822 126 12148	2.7nF 10%
2882	4822 126 12148	2.7nF 10%

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3635	4822 116 52234	100k 5% 0.5W
3636	4822 116 52234	100k 5% 0.5W
3637	4822 116 52285	470k 5% 0.5W
3638	4822 116 52285	470k 5% 0.5W
3639	4822 116 52284	47k 5% 0.5W
3640	4822 116 52284	47k 5% 0.5W
3641	4822 116 52243	1k5 5% 0.5W
3642	4822 116 52243	1k5 5% 0.5W
3643	4822 116 52269	3k3 5% 0.5W
3644	4822 116 52269	3k3 5% 0.5W
3645	4822 116 52289	5k6 5% 0.5W
3646	4822 116 52289	5k6 5% 0.5W
3647	4822 050 11002	1k 1% 0.4W
3648	4822 050 11002	1k 1% 0.4W
3649	4822 116 52251	18k 5% 0.5W
3650	4822 116 52224	470Ω 5% 0.5W
3651	4822 116 52257	22k 5% 0.5W
3652	4822 116 52257	22k 5% 0.5W
3653	4822 050 11002	1k 1% 0.4W
3654	4822 116 52233	10k 5% 0.5W
3655	4822 116 52233	10k 5% 0.5W
3656	4822 116 52233	10k 5% 0.5W
3657	4822 116 52233	10k 5% 0.5W
3658	4822 116 52233	10k 5% 0.5W
3659	4822 116 52257	22k 5% 0.5W
3660	4822 116 52257	22k 5% 0.5W
3661	4822 116 52244	15k 5% 0.5W
3662	4822 116 52244	15k 5% 0.5W
3663	4822 100 11771	Trimmer 20k 30%
3664	4822 100 11771	Trimmer 20k 30%
3665	4822 100 11771	Trimmer 20k 30%
3666	4822 100 11771	Trimmer 20k 30%

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3667	4822 100 11771	Trimmer 20k 30%
3668	4822 100 11771	Trimmer 20k 30%
3669	4822 050 11002	1k 1% 0.4W
3670	4822 116 52233	10k 5% 0.5W
3671	4822 050 11002	1k 1% 0.4W
3672	4822 050 11002	1k 1% 0.4W
3673	4822 116 52257	22k 5% 0.5W
3674	4822 116 52257	22k 5% 0.5W
3677	4822 050 11002	1k 1% 0.4W
3678	4822 050 11002	1k 1% 0.4W
3679	4822 050 11002	1k 1% 0.4W
3680	4822 050 11002	1k 1% 0.4W
3681	4822 050 11002	1k 1% 0.4W
3682	4822 116 52283	4k7 5% 0.5W
3683	4822 116 52283	4k7 5% 0.5W
3684	4822 116 52283	4k7 5% 0.5W
3685	4822 116 52283	4k7 5% 0.5W
3687	4822 050 11002	1k 1% 0.4W
3688	4822 050 11002	1k 1% 0.4W
3689	4822 116 52283	4k7 5% 0.5W
3690	4822 116 52283	4k7 5% 0.5W
3691	4822 116 52233	10k 5% 0.5W
3692	4822 116 52233	10k 5% 0.5W
3693	4822 116 52304	82k 5% 0.5W
3694	4822 116 52304	82k 5% 0.5W
3695	4822 116 52251	18k 5% 0.5W
3696	4822 116 52251	18k 5% 0.5W
3697	4822 116 52224	470Ω 5% 0.5W
3698	4822 116 52224	470Ω 5% 0.5W
3699	4822 116 52224	470Ω 5% 0.5W
3700	4822 116 52224	470Ω 5% 0.5W
3701	4822 116 52231	820Ω 5% 0.5W
3702	4822 116 52231	820Ω 5% 0.5W
3703	4822 116 52265	270k 5% 0.5W
3704	4822 116 52265	270k 5% 0.5W
3705	4822 116 52238	12k 5% 0.5W
3706	4822 116 52238	12k 5% 0.5W
3707	4822 116 52195	47Ω 5% 0.5W
3708	4822 116 52195	47Ω 5% 0.5W
3709	4822 116 52256	2k2 5% 0.5W
3710	4822 116 52256	2k2 5% 0.5W
3711	4822 116 52269	3k3 5% 0.5W
3712	4822 116 52269	3k3 5% 0.5W
3713	4822 116 52224	470Ω 5% 0.5W
3714	4822 116 52269	3.3k 5% 0.5W
3715	4822 116 52269	3.3k 5% 0.5W
3716	4822 116 52269	3.3k 5% 0.5W
3717	4822 116 52224	470Ω 5% 0.5W
3718	4822 116 52224	470Ω 5% 0.5W
3719	4822 116 52224	470Ω 5% 0.5W
3720	4822 116 52224	470Ω 5% 0.5W
3721	4822 116 52224	470Ω 5% 0.5W
3722	4822 116 52224	470Ω 5% 0.5W

COMBI BOARD ELECTRICAL PARTLIST

3563	4822 050 11002	1k 1% 0.4W
3564	4822 116 52265	270k 5% 0.5W
3565	4822 116 52265	270k 5% 0.5W
3566	4822 116 52285	470k 5% 0.5W
3567	4822 116 52285	470k 5% 0.5W
3568	4822 116 52285	470k 5% 0.5W
3569	4822 116 52285	470k 5% 0.5W
3570	4822 116 83885	56Ω 5% 0.5W
3571	4822 116 83885	56Ω 5% 0.5W
3572	4822 116 52285	470k 5% 0.5W
3573	4822 116 52285	470k 5% 0.5W
3574	4822 116 52238	12k 5% 0.5W
3575	4822 116 52238	12k 5% 0.5W
3576	4822 050 11002	1k 1% 0.4W
3577	4822 050 11002	1k 1% 0.4W
3578	4822 116 52284	47k 5% 0.5W
3579	4822 116 80311 ⚠	4Ω7 5%
3580	4822 116 52219	330Ω 5% 0.5W
3581	4822 116 52217	270Ω 5% 0.5W
3582	4822 116 52234	100k 5% 0.5W
3583	4822 050 11002	1k 1% 0.4W
3584	4822 050 11002	1k 1% 0.4W
3585	4822 116 52224	470Ω 5% 0.5W
3586	4822 116 52222	390Ω 5% 0.5W
3587	4822 116 52222	390Ω 5% 0.5W
3588	4822 116 52283	4k7 5% 0.5W
3589	4822 051 10333	33k 2% 0.25W
3590	4822 116 52175	100Ω 5% 0.5W
3591	4822 116 52269	3k3 5% 0.5W
3592	4822 116 52215	220Ω 5% 0.5W
3593	4822 116 52234	100k 5% 0.5W
3594	4822 116 52234	100k 5% 0.5W
3595	4822 116 52239	120k 5% 0.5W
3596	4822 116 52239	120k 5% 0.5W
3597	4822 116 52285	470k 5% 0.5W
3598	4822 116 52285	470k 5% 0.5W
3900	4822 116 52219	330Ω 5% 0.5W
3901	4822 116 52219	330Ω 5% 0.5W
3902	4822 116 52219	330Ω 5% 0.5W
3903	4822 116 52219	330Ω 5% 0.5W
3904	4822 116 52233	10k 5% 0.5W

5520	4822 157 53447	Bead Inductor
5521	4822 157 53447	Bead Inductor

6544	4822 130 34173	BZX79-B5V6
6545	4822 130 34173	BZX79-B5V6
6546	4822 130 30621	1N4148
6547	4822 130 30621	1N4148
6548	4822 130 34174	BZX79-C4V7
6549	4822 130 34233	BZX79-C5V1
6550	4822 130 83081	LTL4231N
6551	4822 130 30621	1N4148
6900	4822 130 30621	1N4148
6901	4822 130 30621	1N4148
6902	4822 130 30621	1N4148
6903	4822 130 30621	1N4148
6904	4822 130 30621	1N4148
6905	4822 130 30621	1N4148
6906	4822 130 30621	1N4148

7501	4822 209 83274	NJM4560D -/21
7516	4822 209 61187	BA15218
7530	4822 130 44196	BC548C
7531	4822 130 44196	BC548C
7532	5322 130 44779	BC338-40
7533	5322 130 44779	BC338-40
7534	5322 130 44779	BC338-40
7535	5322 130 44779	BC338-40
7544	5322 130 44779	BC338-40
7545	5322 130 44779	BC338-40
7546	4822 130 41715	BC328-40
7547	4822 130 41715	BC328-40
7548	4822 130 40937	BC548B
7549	4822 130 40937	BC548B
7553	4822 130 41691	BC556B
7560	4822 130 44196	BC548C
7561	4822 130 40937	BC548B
7562	4822 130 44196	BC548C
7564	5322 209 14865	MC14066BCP
7565	5322 209 14865	MC14066BCP
7900	5322 209 12171	PC74HC4094T
7901	5322 209 12171	PC74HC4094T

NOTE: ONLY THE MENTIONED PARTS ARE NORMAL SERVICE PARTS

FRONT BOARD ELECTRICAL PARTLIST

MISCELLANEOUS

1401	4822 130 91132	FTD Display
1402	4822 130 91135	GE Display
1410	4822 276 12465	Key switch
1411	4822 276 12465	Key switch
1412	4822 276 12465	Key switch
1413	4822 276 12465	Key switch
1414	4822 276 12465	Key switch
1415	4822 276 12465	Key switch
1416	4822 276 12465	Key switch
1417	4822 276 12465	Key switch
1418	4822 276 12465	Key switch
1419	4822 276 12465	Key switch
1420	4822 276 12465	Key switch
1421	4822 276 12465	Key switch
1422	4822 276 12465	Key switch
1423	4822 276 12465	Key switch
1424	4822 276 12465	Key switch
1425	4822 276 12465	Key switch
1426	4822 276 12465	Key switch
1427	4822 276 12465	Key switch
1428	4822 276 12465	Key switch
1429	4822 276 12465	Key switch
1431	4822 276 12465	Key switch
1432	4822 276 13278	Key switch W/LED
1433	4822 276 13278	Key switch W/LED
1510	4822 267 31506	Headphone socket
5401	5322 242 73697	Cer Filter 8MHz
5402	4822 242 70938	X'Tal Res 32.768kHz

2401	5322 122 32654	22nF 10% 63V
2402	4822 124 23176	22µF 20% 16V
2403	4822 124 40184	1000µF 20% 10V
2404	4822 124 80211	22mF 20% 5.5V
2405	4822 121 51252	470nF 5% 63V
2406	4822 121 51252	470nF 5% 63V
2407	4822 121 51252	470nF 5% 63V
2408	5322 122 32658	22pF 5%
2409	5322 122 32658	22pF 5%
2411	4822 122 10577	3.3nF 10% 16V
2412	4822 124 23176	22µF 20% 16V
2413	4822 124 41971	2.2µF 20% 50V
2414	4822 124 23179	10µF 20% 16V
2415	4822 122 33496	100nF 10% 63V
2416	4822 124 22403	10µF 20% 16V
2417	4822 126 11585	22nF
2450	5322 122 32531	100pF 5% 50V
2451	5322 122 32531	100pF 5% 50V
2452	5322 122 32531	100pF 5% 50V
2453	5322 122 32531	100pF 5% 50V
2454	5322 122 32531	100pF 5% 50V
2460	5322 122 32531	100pF 5% 50V
2461	4822 122 33195	100pF 10% 50V
2462	4822 122 33195	100pF 10% 50V
2463	4822 122 33195	100pF 10% 50V
2464	4822 122 33195	100pF 10% 50V
2465	4822 122 33195	100pF 10% 50V
2466	4822 122 33195	100pF 10% 50V
2467	4822 122 33195	100pF 10% 50V
2468	4822 122 33195	100pF 10% 50V
2469	4822 122 33195	100pF 10% 50V
2470	4822 122 33195	100pF 10% 50V
2471	4822 124 41584	100µF 20% 10V
2472	4822 122 33797	47nF 20% 50V
2473	4822 122 33797	47nF 20% 50V
2475	5322 122 34123	1nF 10%
2476	4822 124 41584	100µF 20% 10V
2477	4822 122 33127	2.2nF 10%
2479	5322 122 32654	22nF 10% 63V
2480	4822 122 33169	680pF 10% 50V
2485	5322 122 32965	18pF 5% 50V
2486	5322 122 32965	18pF 5% 50V
2487	5322 122 32965	18pF 5% 50V
2488	5322 122 32965	18pF 5% 50V
2489	5322 122 32531	100pF 5% 50V
2490	5322 122 32965	18pF 5% 50V
2491	5322 122 32965	18pF 5% 50V
2492	5322 122 32452	47pF 5% 63V
2493	5322 122 32452	47pF 5% 63V
2494	5322 122 34123	1nF 10% 50V
2495	5322 122 34123	1nF 10% 50V
2496	5322 122 34123	1nF 10% 50V
2497	5322 122 34123	1nF 10% 50V
2498	5322 122 34123	1nF 10% 50V
2513	4822 122 33496	100nF 10% 63V
2514	4822 122 33496	100nF 10% 63V
2515	5322 122 32654	22nF 10% 63V
2516	5322 122 32654	22nF 10% 63V
2517	4822 122 10575	8.2nF 20% 16V
2518	4822 126 10525	8.2nF 10% 63V
2519	4822 122 10576	1.8nF 10% 16V
2520	4822 122 32153	1.8nF 10%
2521	4822 122 33496	100nF 10% 63V
2522	4822 122 33496	100nF 10% 63V
2523	5322 122 32654	22nF 10% 63V
2524	5322 122 32654	22nF 10% 63V
2525	4822 122 10575	8.2nF 20% 16V
2526	4822 126 10525	8.2nF 10% 63V
2527	4822 122 10576	1.8nF 10% 16V
2528	4822 122 32153	1.8nF 10%
2529	4822 122 33169	680pF 10% 50V
2530	4822 122 32535	680pF 10% 63V
2531	4822 126 10178	820pF 10% 50V
2532	4822 122 33806	820pF 10% 63V
2533	4822 122 33195	100pF 10% 50V

FRONT BOARD ELECTRICAL PARTLIST

2534	4822 122 33195		100pF 10% 50V
2535	4822 122 33848		47pF 5% 50V
2536	4822 122 33848		47pF 5% 50V
2537	4822 124 41973		100µF 20% 16V
2538	4822 126 11585		22nF
2539	4822 124 41973		100µF 20% 16V
2541	4822 124 80192		4.7µF 20% 63V
2542	4822 124 80192		4.7µF 20% 63V

3401	4822 052 10109	⚠	10Ω 5% 0.33W
3402	4822 050 11002		1k 1% 0.4W
3403	4822 116 52175		100Ω 5% 0.5W
3404	4822 116 52228		680Ω 5% 0.5W
3405	4822 052 10108	⚠	1Ω 5% 0.33W
3406	4822 052 10108	⚠	1Ω 5% 0.33W
3407	4822 050 15608		5Ω6 1% 0.4W
3408	4822 050 15608		5Ω6 1% 0.4W
3410	4822 116 90836		10k X 5
3411	4822 116 90839		10k X 4
3412	4822 051 20103		10k 5% 0.1W
3413	4822 116 52219		330Ω 5% 0.5W
3414	4822 051 20103		10k 5% 0.1W
3415	4822 051 20103		10k 5% 0.1W
3416	4822 116 90835		10k X 7
3417	4822 116 52219		330Ω 5% 0.5W
3418	4822 116 52265		270k 5% 0.5W
3419	4822 116 52265		270k 5% 0.5W
3420	4822 051 20103		10k 5% 0.1W
3421	4822 051 20103		10k 5% 0.1W
3422	4822 051 20104		100k 5% 0.1W
3423	4822 116 52233		10k 5% 0.5W
3424	4822 051 20104		100k 5%
3430	4822 116 52233		10k 5% 0.5W
3434	4822 116 52233		10k 5% 0.5W
3450	4822 051 20102		1k 5% 0.1W
3451	4822 051 20102		1k 5% 0.1W
3452	4822 051 20102		1k 5% 0.1W
3453	4822 051 20102		1k 5% 0.1W
3454	4822 051 20102		1k 5% 0.1W
3455	4822 051 20223		22k 5% 0.1W
3456	4822 051 20102		1k 5% 0.1W
3457	4822 051 20102		1k 5% 0.1W
3458	4822 051 20102		1k 5% 0.1W
3460	4822 050 11002		1k 1% 0.4W
3461	4822 116 52234		100k 5% 0.5W
3462	4822 050 11002		1k 1% 0.4W
3463	4822 116 52234		100k 5% 0.5W
3466	4822 116 90843		100k X 5
3471	4822 051 20102		1k 5%
3472	4822 051 20222		2k2 5%
3473	4822 051 20152		1k5 5%

3474	4822 051 20682		6k8 5%
3475	4822 051 20103		10k 5%
3480	4822 051 20103		10k 5%
3481	4822 051 20103		10k 5%
3487	4822 051 20103		10k 5% 0.1W
3488	4822 051 20109		10Ω 5% 0.1W
3489	4822 051 20472		4k7 5% 0.1W
3490	4822 116 52233		10k 5%
3493	4822 116 52233		10k 5% 0.5W
3495	4822 116 52233		10k 5% 0.5W
3496	4822 116 52233		10k 5% 0.5W
3497	4822 116 52233		10k 5% 0.5W
3498	4822 050 11002		1k 1% 0.4W
3499	4822 050 15608		5Ω6 1% 0.4W
3501	4822 116 52256		2k2 5% 0.5W
3502	4822 116 52256		2k2 5% 0.5W
3503	4822 116 52263		2k7 5% 0.5W
3504	4822 116 52263		2k7 5% 0.5W
3505	4822 116 52283		4k7 5% 0.5W
3506	4822 116 52283		4k7 5% 0.5W
3507	4822 105 11107		Potm 50kB X 2
3508	4822 105 11107		Potm 50kB X 2
3509	4822 105 11107		Potm 50kB X 2
3510	4822 105 11107		Potm 50kB X 2
3511	4822 105 11107		Potm 50kB X 2
3513	4822 116 52244		15k 5% 0.5W
3514	4822 116 52244		15k 5% 0.5W
3515	4822 116 52251		18k 5% 0.5W
3516	4822 051 20183		18k 5% 0.1W
3517	4822 051 20183		18k 5% 0.1W
3518	4822 051 20183		18k 5% 0.1W
3519	4822 051 20223		22k 5% 0.1W
3520	4822 051 20223		22k 5% 0.1W
3521	4822 116 52244		15k 5% 0.5W
3522	4822 051 20153		15k 5% 0.1W
3523	4822 051 20183		18k 5% 0.1W
3524	4822 051 20183		18k 5% 0.1W
3525	4822 116 52251		18k 5% 0.5W
3526	4822 051 20183		18k 5% 0.1W
3527	4822 051 20223		22k 5% 0.1W
3528	4822 051 20223		22k 5% 0.1W
3529	4822 116 52304		82k 5% 0.5W
3530	4822 051 20823		82k 5% 0.1W
3531	4822 116 52243		1k5 5% 0.5W
3532	4822 116 52243		1k5 5% 0.5W
3533	4822 116 52243		1k5 5% 0.5W
3534	4822 051 20152		1k5 5% 0.1W
3535	4822 116 52292		560k 5% 0.5W
3536	4822 116 52292		560k 5% 0.5W
3537	4822 116 52284		47k 5% 0.5W
3538	4822 051 20223		22k 5% 0.1W
3541	4822 051 20223		22k 5% 0.1W
3542	4822 051 20223		22k 5% 0.1W

3543	4822 116 52244		15k 5% 0.5W
3544	4822 116 52213		180Ω 5% 0.5W
4400	4822 051 10008		0Ω 5% 0.25W
4401	4822 051 10008		0Ω 5% 0.25W
4402	4822 051 10008		0Ω 5% 0.25W
4403	4822 051 10008		0Ω 5% 0.25W
4404	4822 051 10008		0Ω 5% 0.25W
4405	4822 051 10008		0Ω 5% 0.25W
4406	4822 051 10008		0Ω 5% 0.25W
4420	4822 051 10008		0Ω 5% 0.25W
4421	4822 051 10008		0Ω 5% 0.25W
4422	4822 051 10008		0Ω 5% 0.25W
4425	4822 051 10008		0Ω 5% 0.25W

5410	4822 157 62552		2.2µH 20%
5411	4822 157 62552		2.2µH 20%
5412	4822 157 53447		Bead inductor
5413	4822 157 53447		Bead inductor
5414	4822 157 53447		Bead inductor
5416	4822 157 53447		Bead inductor
5417	4822 157 53447		Bead inductor
5511	4822 157 53447		Bead inductor
5512	4822 157 53447		Bead inductor
5513	4822 157 53447		Bead inductor

6401	4822 130 34167		BZX79-C6V2
6402	4822 130 30621		1N4148
6403	4822 130 30621		1N4148
6405	4822 130 81254		GP1U520X
6406	4822 130 30621		1N4148
6407	4822 130 30621		1N4148
6408	4822 130 30621		1N4148
6409	4822 130 30621		1N4148
6410	4822 130 30621		1N4148
6411	4822 130 30621		1N4148
6412	4822 130 30621		1N4148
6415	4822 130 30621		1N4148
6470	5322 130 31504		BZX79-C3V3
6471	4822 130 30621		1N4148

7400	4822 209 31513		TMP87CM70F UPC FW40
7401	4822 209 31515		BA3830S
7402	4822 209 31508		ST24C01
7403	5322 209 10421		HEF4094BP
7450	5322 130 44779		BC338-40
7451	4822 130 60588		DTC114ES

7452	4822 130 44196		BC548C
7453	4822 130 60588		DTC114ES
7454	4822 130 44196		BC548C
7455	4822 130 44196		BC548C
7459	5322 130 60068		BC558C
7460	4822 130 44461		BC546B
7461	4822 130 44461		BC546B
7462	4822 130 44461		BC546B
7463	4822 130 44461		BC546B
7464	4822 130 44461		BC546B
7465	4822 130 44461		BC546B
7466	4822 130 44461		BC546B
7470	4822 130 42682		DTA144ES
7539	4822 209 83274		NJM4560D

NOTE: ONLY THE MENTIONED PARTS ARE NORMAL SERVICE PARTS

SELECTOR BOARD ELECTRICAL PARTLIST

7555	4822 209 83274	NJM4560D
7556	4822 130 44196	BC548C
7557	4822 209 83274	NJM4560D
7559	4822 130 41327	BC327-40
7561	4822 130 44196	BC548C

NOTE: ONLY THE MENTIONED PARTS ARE NORMAL SERVICE PARTS

COMBI BOARD ELECTRICAL PARTLIST

MISCELLANEOUS

1502	4822 146 31122	Mic socket -/21
1900	4822 276 12465	Key switch
1901	4822 276 12465	Key switch
1902	4822 276 12465	Key switch
1903	4822 276 12465	Key switch
1904	4822 276 12465	Key switch
1905	4822 276 12465	Key switch
1906	4822 276 12465	Key switch
1907	4822 276 12465	Key switch
1908	4822 276 12465	Key switch
1909	4822 276 12465	Key switch
1910	4822 276 12465	Key switch
1911	4822 276 12465	Key switch
1912	4822 276 12465	Key switch
1913	4822 276 12465	Key switch
1914	4822 276 12465	Key switch
1915	4822 276 12465	Key switch
1916	4822 276 12465	Key switch
1917	4822 276 12465	Key switch
1918	4822 276 12465	Key switch
1919	4822 276 12465	Key switch
1920	4822 276 12465	Key switch
1921	4822 276 12465	Key switch
1922	4822 276 12465	Key switch
1923	4822 276 13278	Key switch W/LED
1924	4822 276 13278	Key switch W/LED
1925	4822 276 13278	Key switch W/LED
1926	4822 276 13278	Key switch W/LED
1929	4822 267 51162	Connector 6P
1930	4822 267 51161	Connector 5P

2500	4822 124 23178	47µF 20% 16V -/21
2501	4822 126 11585	22nF -/21
2502	4822 124 41973	100µF 20% 16V -/21
2503	4822 124 41969	1µF 20% 50V -/21
2504	4822 124 40248	10µF 20% 63V -/21
2505	4822 124 40248	10µF 20% 63V -/21
2506	4822 124 40248	10µF 20% 63V -/21
2507	4822 124 41398	1µF 20% 63V -/21
2508	4822 122 33195	100pF 10% 50V -/21
2509	4822 122 33195	100pF 10% 50V -/21
2510	4822 122 10573	56pF 5% 50V -/21
2511	4822 122 10573	56pF 5% 50V -/21
2512	4822 122 10573	56pF 5% 50V -/21
2513	4822 122 10573	56pF 5% 50V -/21
2514	4822 122 33169	680pF 10% 50V -/21
2515	4822 122 33169	680pF 10% 50V -/21
2516	4822 122 10573	56pF 5% 50V -/21
2517	4822 122 33196	330pF 10% 50V -/21
2518	4822 124 41398	1µF 20% 63V
2519	4822 124 41398	1µF 20% 63V

2520	4822 124 40248	10µF 20% 63V
2521	4822 124 40248	10µF 20% 63V
2522	4822 122 33519	470pF 10% 50V
2523	4822 122 33519	470pF 10% 50V
2524	4822 124 41973	100µF 20% 16V
2525	4822 124 41973	100µF 20% 16V
2526	4822 124 40433	47µF 20% 25V
2527	4822 126 11585	22nF
2528	4822 122 33169	680pF 10%
2529	4822 122 33169	680pF 10%
2530	4822 122 10166	22nF 30%
2531	4822 122 10166	22nF 30%
2532	4822 122 33195	100pF 10% 50V
2533	4822 122 10574	1.2nF 10% 16V
2534	4822 122 10574	1.2nF 10% 16V
2535	4822 122 10574	1.2nF 10% 16V
2536	4822 124 23179	10µF 20% 16V
2537	4822 124 41973	100µF 20% 16V
2538	4822 124 40433	47µF 20% 25V
2539	4822 124 41973	100µF 20% 16V
2544	4822 124 40196	220µF 20% 16V
2553	4822 124 40248	10µF 20% 63V
2554	4822 124 40248	10µF 20% 63V -/21
2555	4822 124 40248	10µF 20% 63V -/21
2559	4822 124 41973	100µF 20% 16V
2560	4822 126 11585	22nF
2561	4822 126 11585	22nF
2562	4822 121 51387	10nF 20% 16V
2563	4822 121 51387	10nF 20% 16V
2564	4822 126 11714	4.7nF 20%
2565	4822 126 11714	4.7nF 20%
2566	4822 122 10575	8.2nF 20% 16V
2567	4822 122 10575	8.2nF 20% 16V
2568	4822 122 33195	100pF 10% 50V
2569	4822 122 33195	100pF 10% 50V
2570	4822 122 10574	1.2nF 10% 16V
2571	4822 122 10574	1.2nF 10% 16V
2572	4822 124 40196	220µF 20% 16V
2573	5322 121 42498	680nF 5% 63V
2574	5322 121 42498	680nF 5% 63V
2575	4822 124 40248	10µF 20% 63V
2576	4822 124 40248	10µF 20% 63V
2900	4822 124 23179	10µF 20% 16V
2902	4822 122 10574	1.2nF 10%
2904	4822 122 10574	1.2nF 10%

3500	4822 116 83894	47Ω 5% 0.5W -/21
3503	4822 116 52238	12k 5% 0.5W -/21
3504	4822 116 52234	100k 5% 0.5W -/21
3505	4822 116 52303	8k2 5% 0.5W -/21
3506	4822 116 52224	470Ω 5% 0.5W -/21

3507	4822 101 21204	Potm 20kA -/21
3508	4822 116 52256	2k2 5% 0.5W -/21
3509	4822 116 52233	10k 5% 0.5W -/21
3510	4822 116 52238	12k 5% 0.5W -/21
3511	4822 116 52224	470Ω 5% 0.5W -/21
3512	4822 116 52234	100k 5% 0.5W -/21
3513	4822 116 83894	47Ω 5% 0.5W -/21
3514	4822 116 52175	100Ω 5% 0.5W
3515	4822 116 52175	100Ω 5% 0.5W
3516	4822 116 52251	18k 5% 0.5W
3517	4822 116 52251	18k 5% 0.5W
3518	4822 116 52249	1k8 5% 0.5W
3519	4822 116 52249	1k8 5% 0.5W
3520	4822 116 52251	18k 5% 0.5W
3521	4822 116 52251	18k 5% 0.5W
3522	4822 116 83921	5Ω6 5% 0.5W
3523	4822 116 83921	5Ω6 5% 0.5W
3524	4822 116 80311 ⚠	4Ω7 5%
3526	4822 116 52256	2k2 5% 0.5W
3527	4822 116 52256	2k2 5% 0.5W
3528	4822 116 52277	39k 5% 0.5W
3529	4822 116 52284	47k 5% 0.5W
3530	4822 116 52283	4k7 5% 0.5W
3531	4822 116 52283	4k7 5% 0.5W
3532	4822 116 52303	8k2 5% 0.5W
3533	4822 116 52303	8k2 5% 0.5W
3534	4822 101 90226	Potm 50kB X 2 W/Motor
3535	4822 116 52233	10k 5% 0.5W
3536	4822 050 11002	1k 1% 0.4W
3537	4822 050 11002	1k 1% 0.4W
3538	4822 116 52222	390Ω 5% 0.5W
3539	4822 116 52222	390Ω 5% 0.5W
3540	4822 050 23905	3M9 1% 0.6W
3541	4822 050 23905	3M9 1% 0.6W
3542	4822 116 52222	390Ω 5% 0.5W
3543	4822 116 52222	390Ω 5% 0.5W
3544	4822 050 11002	1k 1% 0.4W
3545	4822 050 11002	1k 1% 0.4W
3546	4822 050 11002	1k 1% 0.4W
3547	4822 050 11002	1k 1% 0.4W
3548	4822 116 52234	100k 5% 0.5W -/21
3549	4822 116 52215	220Ω 5% 0.5W
3550	4822 116 52215	220Ω 5% 0.5W
3551	4822 116 52215	220Ω 5% 0.5W
3552	4822 116 52215	220Ω 5% 0.5W
3553	4822 116 52257	22k 5% 0.5W
3554	4822 116 52257	22k 5% 0.5W
3555	4822 116 52257	22k 5% 0.5W
3556	4822 116 52269	3k3 5% 0.5W
3559	4822 116 52256	2k2 5% 0.5W
3560	4822 116 52263	2k7 5% 0.5W
3561	4822 116 52263	2k7 5% 0.5W
3562	4822 050 11002	1k 1% 0.4W

SELECTOR BOARD ELECTRICAL PARTLIST

MISCELLANEOUS

1554	4822 266 30293	Cinch socket 4P
1555	4822 267 60328	Connector 21P
1557	4822 267 51158	Connector 7P
1558	4822 276 13282	Key switch

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2551	4822 124 40239	0.47µF 20% 63V
2552	4822 124 40239	0.47µF 20% 63V
2553	4822 122 33196	330pF 10% 50V
2554	4822 122 33196	330pF 10% 50V
2557	4822 124 40239	0.47µF 20% 63V
2558	4822 124 40239	0.47µF 20% 63V
2561	4822 124 40239	0.47µF 20% 63V
2562	4822 124 40239	0.47µF 20% 63V
2563	4822 124 40239	0.47µF 20% 63V
2564	4822 124 40239	0.47µF 20% 63V
2565	4822 124 40239	0.47µF 20% 63V
2566	4822 124 40239	0.47µF 20% 63V
2567	4822 126 10178	820pF 10% 50V
2568	4822 126 10178	820pF 10% 50V
2569	4822 121 51387	10nF 20% 16V
2570	4822 121 51387	10nF 20% 16V
2571	4822 126 12148	2.7nF 10%
2572	4822 126 12148	2.7nF 10%
2573	4822 124 42218	470µF 20% 10V
2574	4822 126 12145	47nF 10% 25V
2575	4822 124 41973	100µF 20% 16V
2577	4822 124 40248	10µF 20% 63V
2578	4822 124 40248	10µF 20% 63V
2581	4822 122 33195	100pF 10% 50V
2582	4822 122 33195	100pF 10% 50V
2583	4822 122 33169	680pF 10% 50V
2584	4822 122 33169	680pF 10% 50V
2585	4822 122 10577	3.3nF 10% 16V
2586	4822 122 10577	3.3nF 10% 16V
2587	4822 124 80192	4.7µF 20% 63V
2588	4822 124 80192	4.7µF 20% 63V
2589	4822 126 12145	47nF 10% 25V
2590	4822 124 23794	470µF 20% 16V
2591	4822 122 33196	330pF 10% 50V
2592	4822 122 33196	330pF 10% 50V
2593	4822 124 40248	10µF 20% 63V
2594	4822 124 40248	10µF 20% 63V
2595	4822 124 40248	10µF 20% 63V
2596	4822 124 40248	10µF 20% 63V
2597	4822 122 33195	100pF 10% 50V
2598	4822 122 33195	100pF 10% 50V
2599	4822 124 41973	100µF 20% 16V
2600	4822 126 12145	47nF 10% 25V
2601	4822 126 12147	22nF 10% 25V
2605	4822 122 33195	100pF 10% 50V
2606	4822 122 33195	100pF 10% 50V
2607	4822 122 33849	150pF 10% 50V
2608	4822 122 33849	150pF 10% 50V
2609	4822 124 40239	0.47µF 20% 63V
2610	4822 124 40239	0.47µF 20% 63V
2611	4822 124 40177	47µF 20% 10V
2612	4822 126 12339	2.2nF 10%
2615	4822 124 80192	4.7µF 20% 63V
2616	4822 124 41973	100µF 20% 16V
2617	4822 124 40248	10µF 20% 63V
2618	4822 122 10573	56pF 5% 50V
2619	4822 122 10573	56pF 5% 50V
2620	4822 122 10573	56pF 5% 50V
2621	4822 122 10573	56pF 5% 50V
2623	4822 122 33519	470pF 10% 50V
2624	4822 122 33519	470pF 10% 50V
2625	4822 122 33519	470pF 10% 50V
2626	4822 122 33519	470pF 10% 50V
2627	4822 122 33519	470pF 10% 50V
2628	4822 122 33519	470pF 10% 50V
2629	4822 122 33519	470pF 10% 50V
2630	4822 122 33519	470pF 10% 50V

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3551	4822 116 52234	100k 5% 0.5W
3552	4822 116 52234	100k 5% 0.5W
3553	4822 116 52284	47k 5% 0.5W
3554	4822 116 52284	47k 5% 0.5W
3555	4822 050 11002	1k 1% 0.4W
3556	4822 050 11002	1k 1% 0.4W
3557	4822 116 52233	10k 5% 0.5W
3558	4822 116 52233	10k 5% 0.5W
3559	4822 116 52297	68k 5% 0.5W
3560	4822 116 52297	68k 5% 0.5W
3561	4822 116 52233	10k 5% 0.5W
3562	4822 116 52233	10k 5% 0.5W
3563	4822 116 52245	150k 5% 0.5W
3564	4822 116 52245	150k 5% 0.5W
3565	4822 116 52244	15k 5% 0.5W
3566	4822 116 52244	15k 5% 0.5W
3567	4822 116 52297	68k 5% 0.5W
3568	4822 116 52297	68k 5% 0.5W
3569	4822 116 52303	8k2 5% 0.5W
3570	4822 116 52303	8k2 5% 0.5W
3571	4822 116 52175	100Ω 5% 0.5W
3572	4822 116 52175	100Ω 5% 0.5W
3573	4822 116 52226	560Ω 5% 0.5W
3574	4822 116 52226	560Ω 5% 0.5W
3575	4822 116 52226	560Ω 5% 0.5W
3576	4822 116 52226	560Ω 5% 0.5W
3577	4822 116 52272	330k 5% 0.5W
3578	4822 116 52272	330k 5% 0.5W
3579	4822 116 52264	27k 5% 0.5W
3580	4822 116 52264	27k 5% 0.5W
3581	4822 116 52233	10k 5% 0.5W
3582	4822 116 52233	10k 5% 0.5W
3583	4822 116 52284	47k 5% 0.5W
3584	4822 116 52244	15k 5% 0.5W
3585	4822 116 52284	47k 5% 0.5W
3586	4822 116 52284	47k 5% 0.5W
3587	4822 116 52284	47k 5% 0.5W
3588	4822 116 52284	47k 5% 0.5W
3589	4822 116 52284	47k 5% 0.5W
3590	4822 116 52284	47k 5% 0.5W
3591	4822 116 52284	47k 5% 0.5W
3592	4822 116 52284	47k 5% 0.5W
3595	4822 116 52224	470Ω 5% 0.5W
3596	4822 116 52224	470Ω 5% 0.5W
3597	4822 116 52244	15k 5% 0.5W
3598	4822 116 52244	15k 5% 0.5W
3601	4822 116 52256	2k2 5% 0.5W
3602	4822 116 52256	2k2 5% 0.5W
3603	4822 116 52256	2k2 5% 0.5W
3604	4822 116 52256	2k2 5% 0.5W
3605	4822 116 52251	18k 5% 0.5W
3606	4822 116 52251	18k 5% 0.5W
3607	4822 116 52284	47k 5% 0.5W
3608	4822 116 52284	47k 5% 0.5W
3609	4822 116 52238	12k 5% 0.5W
3610	4822 116 52238	12k 5% 0.5W
3611	4822 116 52233	10k 5% 0.5W
3612	4822 116 52233	10k 5% 0.5W
3613	4822 116 52233	10k 5% 0.5W
3614	4822 116 52233	10k 5% 0.5W
3615	4822 052 10339 ⚠	33Ω 5% 0.33W
3616	4822 050 11002	1k 1% 0.4W
3617	4822 116 52244	15k 5% 0.5W
3618	4822 116 52244	15k 5% 0.5W
3619	4822 116 52249	1k8 5% 0.5W
3620	4822 116 52249	1k8 5% 0.5W
3621	4822 116 52231	820Ω 5% 0.5W
3622	4822 116 52231	820Ω 5% 0.5W
3623	4822 116 52231	820Ω 5% 0.5W
3624	4822 116 52231	820Ω 5% 0.5W
3625	4822 116 52238	12k 5% 0.5W
3626	4822 116 52258	220k 5% 0.5W
3629	4822 116 52233	10k 5% 0.5W
3630	4822 050 11002	1k 1% 0.4W
3631	4822 116 52257	22k 5% 0.5W
3632	4822 116 52257	22k 5% 0.5W
3633	4822 116 52257	22k 5% 0.5W
3634	4822 116 52257	22k 5% 0.5W
3635	4822 116 52234	100k 5% 0.5W
3636	4822 116 52234	100k 5% 0.5W
3637	4822 052 10339 ⚠	33Ω 5% 0.33W
3638	4822 116 52226	560Ω 5% 0.5W
3639	4822 116 52277	39k 5% 0.5W
3640	4822 116 52277	39k 5% 0.5W
3641	4822 116 52249	1k8 5% 0.5W
3642	4822 116 52235	1M 5% 0.5W
3649	4822 116 52269	3k3 5% 0.5W
3650	4822 116 52269	3k3 5% 0.5W
3651	4822 116 52263	2k7 5% 0.5W
3652	4822 116 52263	2k7 5% 0.5W
3653	4822 116 52226	560Ω 5% 0.5W
3654	4822 050 11002	1k 1% 0.4W

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5551	4822 157 53447	Bead inductor
5552	4822 157 62552	2.2µH 20%
5553	4822 157 62552	2.2µH 20%
5554	4822 157 62552	2.2µH 20%
5555	4822 157 62552	2.2µH 20%
5556	4822 157 62552	2.2µH 20%
5557	4822 157 62552	2.2µH 20%
5558	4822 157 62552	2.2µH 20%
5559	4822 157 62552	2.2µH 20%

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6551	4822 130 30621	1N4148
6552	4822 130 30621	1N4148
6553	4822 130 30621	1N4148
6554	4822 130 30621	1N4148
6555	4822 130 30621	1N4148
6556	4822 130 30621	1N4148
6557	4822 130 30621	1N4148
6558	4822 130 30621	1N4148
6559	4822 130 30621	1N4148
6560	4822 130 30621	1N4148
6561	4822 130 30621	1N4148
6562	4822 130 30621	1N4148
6563	4822 130 30621	1N4148
6564	4822 130 30621	1N4148
6565	4822 130 30621	1N4148
6566	4822 130 30621	1N4148
6567	4822 130 30621	1N4148
6568	4822 130 30621	1N4148
6569	4822 130 34173	BZX79-C5V6
6570	4822 130 30621	1N4148
6571	4822 130 30621	1N4148

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7551	4822 209 83274	NJM4560D
7552	5322 209 10421	HEF4094BP
7553	4822 130 44196	BC548C
7554	4822 130 44196	BC548C

POWER BOARD ELECTRICAL PARTLIST

MISCELLANEOUS

1251	4822 252 11115		Circuit breaker 2.5A
1252	4822 252 11115		Circuit breaker 2.5A
1260	4822 267 31176		Speaker socket
1261	4822 267 31445	⚠	Mains socket -/37
1261	4822 267 31383	⚠	Mains socket
1262	4822 272 10269	⚠	Voltage selector -/21
1301	4822 252 51122	⚠	Fuse T5A 250V -/37
1301	4822 071 54002	⚠	Fuse T4A 250V
1302	4822 252 51122	⚠	Fuse T5A 250V -/37
1302	4822 071 54002	⚠	Fuse T4A 250V
1303	4822 253 30334	⚠	Fuse T1.25A 250V -/37
1303	4822 071 56301	⚠	Fuse T630mA 250V
1304	4822 253 30334	⚠	Fuse T1.25A 250V -/37
1304	4822 071 56301	⚠	Fuse T630mA 250V
1305	4822 253 30334	⚠	Fuse T1.25A 250V -/37
1305	4822 071 56301	⚠	Fuse T630mA 250V
1306	4822 253 30334	⚠	Fuse T1.25A 250V -/37
1306	4822 071 56301	⚠	Fuse T630mA 250V
1307	4822 253 10128	⚠	Fuse T2A 250V -/37
1308	4822 253 30334	⚠	Fuse T1.25A 250V -/37
1308	4822 071 56301	⚠	Fuse T630mA 250V
1309	4822 253 30334	⚠	Fuse T1.25A 250V -/37
1309	4822 071 56301	⚠	Fuse T630mA 250V

2251	4822 124 40244	2.2µF 20% 63V
2252	4822 124 40244	2.2µF 20% 63V
2253	5322 124 21189	100µF 20% 40V
2254	5322 124 21189	100µF 20% 40V
2255	4822 122 33197	1nF 10% 50V
2256	4822 122 33197	1nF 10% 50V
2257	4822 124 80196	47µF 20% 50V
2258	4822 124 80196	47µF 20% 50V
2259	4822 121 42007	100nF 10% 100V
2260	4822 121 42007	100nF 10% 100V
2265	4822 122 10459	560pF 10% 50V
2266	4822 122 10459	560pF 10% 50V
2267	4822 122 33195	100pF 10% 50V
2268	4822 122 33195	100pF 10% 50V
2269	4822 122 33195	100pF 10% 50V
2270	4822 122 33195	100pF 10% 50V
2271	4822 121 42007	100nF 10% 100V
2272	4822 121 42007	100nF 10% 100V
2273	4822 122 33195	100pF 10% 50V
2274	4822 122 33195	100pF 10% 50V
2276	4822 126 11316	47nF 50V
2277	4822 126 11316	47nF 50V
2282	4822 124 40435	10µF 20% 50V
2284	4822 124 42245	22µF 20% 63V
2286	4822 124 80196	47µF 20% 50V
2300	4822 124 42367	3300µF 20% 35V
2301	4822 124 42367	3300µF 20% 35V

2302	4822 124 42367	3300µF 20% 35V
2303	4822 124 40248	10µF 20% 63V
2304	4822 124 22412	2200µF 20% 16V
2305	4822 124 23794	470µF 20% 16V
2306	4822 122 33197	1nF 10% 50V
2308	4822 124 42246	470µF 20% 25V
2312	4822 124 40242	1µF 20% 63V
2313	4822 124 42391	470µF 20% 63V
2314	4822 124 42245	22µF 20% 63V
2315	4822 124 42392	470µF 20% 50V
2316	4822 124 40184	1000µF 20% 10V
2317	4822 124 42246	470µF 20% 25V
2318	4822 124 40248	10µF 20% 63V
2320	4822 121 42007	100nF 10% 100V
2321	4822 121 42007	100nF 10% 100V
2322	4822 121 42007	100nF 10% 100V
2323	4822 121 42007	100nF 10% 100V
2324	4822 121 42007	100nF 10% 100V
2325	4822 121 42007	100nF 10% 100V
2326	4822 121 42007	100nF 10% 100V
2329	4822 121 42007	100nF 10% 100V except -/37
2330	4822 121 42007	100nF 10% 100V except -/37
2331	4822 121 42007	100nF 10% 100V
2332	4822 121 42007	100nF 10% 100V
2333	4822 121 42007	100nF 10% 100V
2334	4822 121 42007	100nF 10% 100V
2335	4822 121 42007	100nF 10% 100V

3251	4822 116 52269	3k3 5% 0.5W
3252	4822 116 52269	3k3 5% 0.5W
3253	4822 116 52224	470Ω 5% 0.5W
3254	4822 116 52224	470Ω 5% 0.5W
3255	4822 116 52291	56k 5% 0.5W
3256	4822 116 52291	56k 5% 0.5W
3257	4822 116 52256	2k2 5% 0.5W
3258	4822 116 52256	2k2 5% 0.5W
3259	4822 116 52256	2k2 5% 0.5W
3260	4822 116 52256	2k2 5% 0.5W
3261	4822 116 52291	56k 5% 0.5W
3262	4822 116 52291	56k 5% 0.5W
3263	4822 052 10478	⚠ 4Ω7 5% 0.33W
3264	4822 052 10478	⚠ 4Ω7 5% 0.33W
3265	4822 052 10478	⚠ 4Ω7 5% 0.33W
3266	4822 052 10478	⚠ 4Ω7 5% 0.33W
3280	4822 116 83863	1k 5% 0.5W
3281	4822 116 83863	1k 5% 0.5W
3282	4822 116 52263	2k7 5%
3283	4822 052 10101	⚠ 100Ω 5% 0.33W
3284	4822 116 83932	⚠ 220Ω 5% 2W
3286	4822 116 52257	22k 5%
3301	4822 116 83886	68Ω 5% 0.5W

3302	4822 116 83886	68Ω 5% 0.5W
3303	4822 116 83885	56Ω 5% 0.5W
3304	4822 116 83877	2k7 5% 0.5W
3305	4822 052 10101	⚠ 100Ω 5% 0.33W
3306	4822 116 83873	2k2 5% 0.5W
3307	4822 052 10101	⚠ 100Ω 5% 0.33W
3308	4822 053 21106	⚠ 10M 5% 0.5W -/37
3310	4822 116 83871	1k8 5% 0.5W
3311	4822 052 10479	⚠ 47Ω 5% 0.33W
3312	4822 116 52256	2k2 5% 0.5W
3313	4822 116 52263	2k7 5% 0.5W
3314	4822 116 52277	39k 5% 0.5W
3315	4822 116 52233	10k 5% 0.5W
3316	4822 051 10333	33k 2% 0.25W
3317	4822 116 52233	10k 5% 0.5W
3318	4822 050 11002	1k 1% 0.4W
3319	4822 116 83873	2k2 5% 0.5W
3320	4822 116 52233	10k 5% 0.5W
3321	4822 116 52283	4k7 5% 0.5W

5001	4822 146 31157	⚠ Mains transfo -/21/30
5001	4822 146 31127	⚠ Mains transfo -/20/22/25/37
5251	4822 157 53447	Bead inductor -/20/22/37
5253	4822 157 53447	Bead inductor
5254	4822 157 53447	Bead inductor

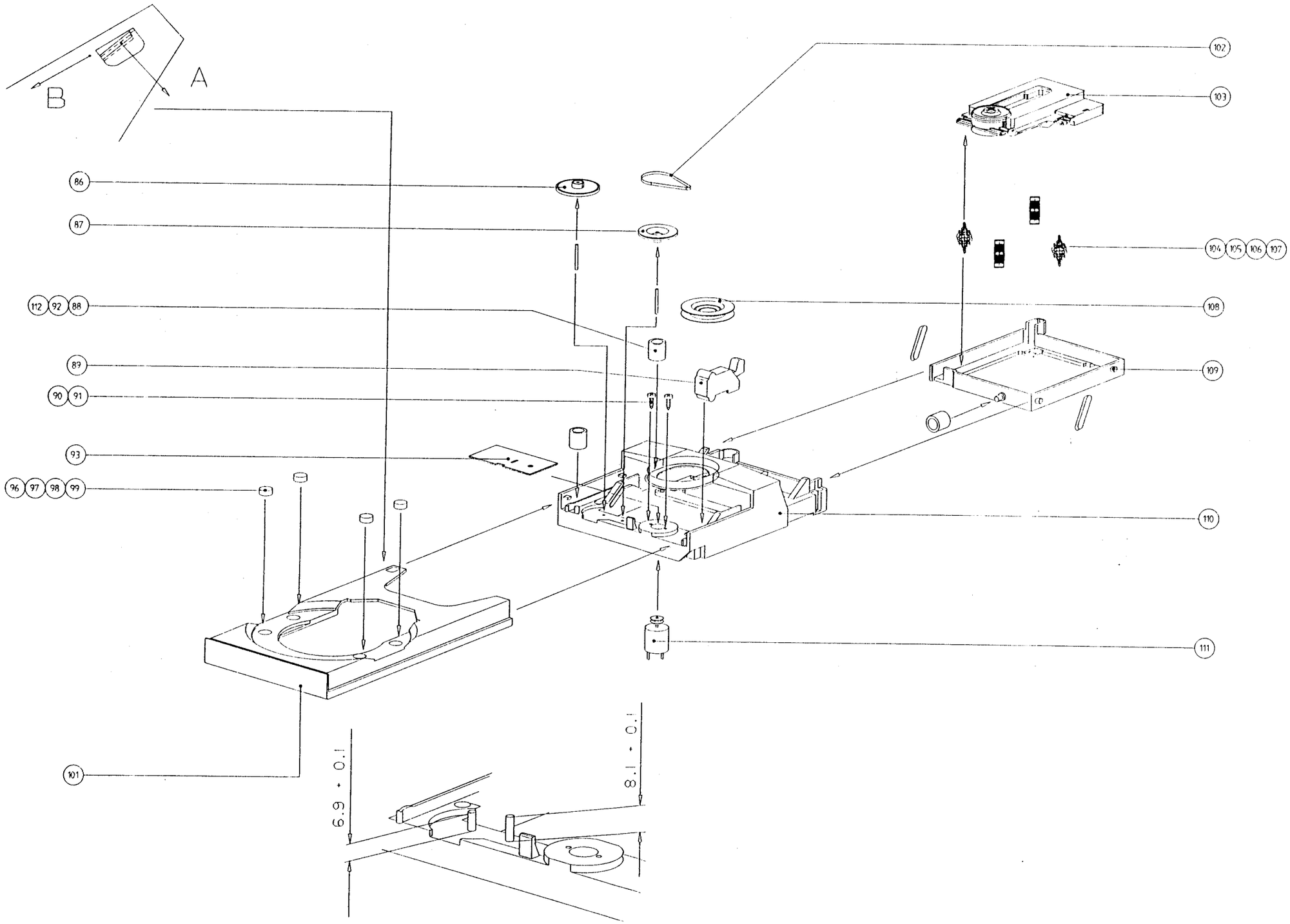
6300	4822 130 82078	⚠ D5SBA20
6301	5322 130 80686	⚠ 1N5392
6302	5322 130 80686	⚠ 1N5392
6303	5322 130 30684	1N4002
6304	5322 130 30684	1N4002
6305	5322 130 30684	1N4002
6306	5322 130 30684	1N4002
6307	5322 130 30684	1N4002
6308	4822 130 34195	BZX79-C13
6309	4822 130 34278	BZX79-C6V8
6311	4822 130 34281	BZX79-C15
6312	4822 130 34281	BZX79-C15
6313	4822 130 31981	BZX79-C3V9
6314	4822 130 34233	BZX79-C5V1
6315	4822 130 30621	1N4148
6317	4822 130 30621	1N4148
6318	4822 130 31981	BZX79-C3V9
6320	4822 130 30621	1N4148

7251	4822 209 31514	⚠ STK4132II
7300	4822 130 61236	⚠ BD234

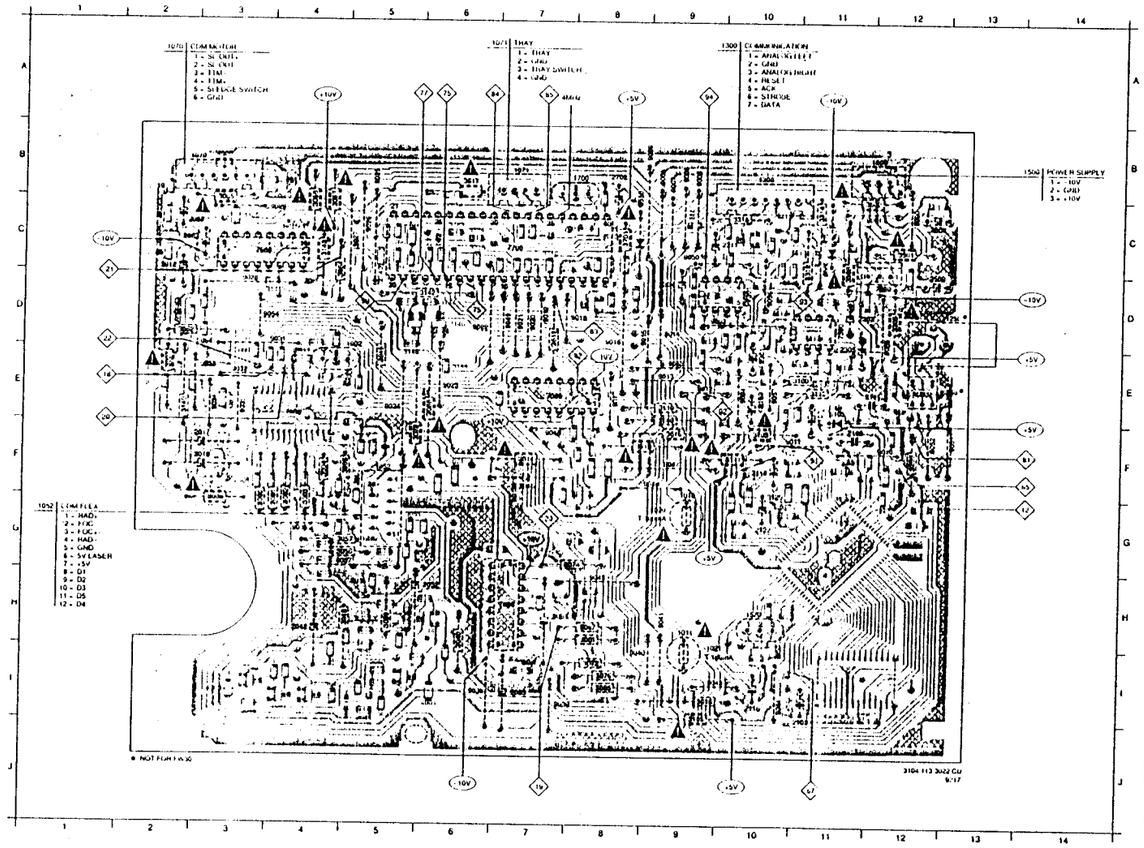
7301	4822 130 40937	BC548B
7302	4822 130 40937	BC548B
7303	4822 130 44197	BC558B
7304	5322 130 44786	⚠ BD675
7306	5322 130 60268	⚠ BD236

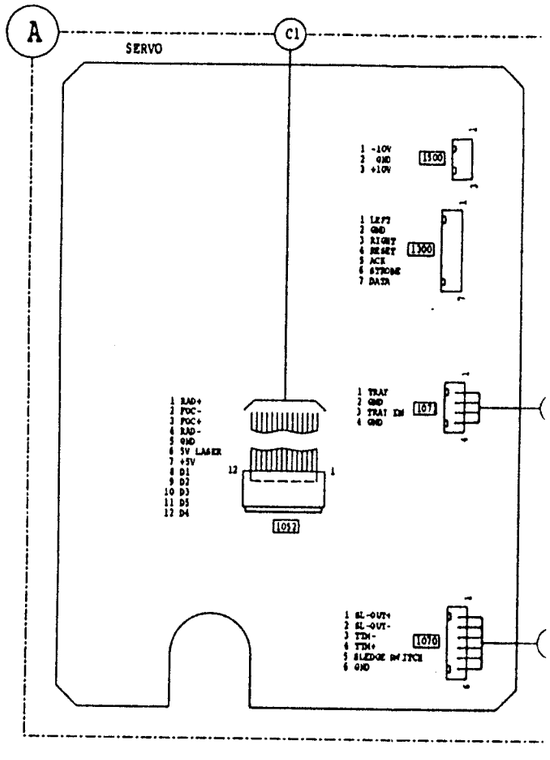
NOTE: ONLY THE MENTIONED PARTS ARE NORMAL SERVICE PARTS

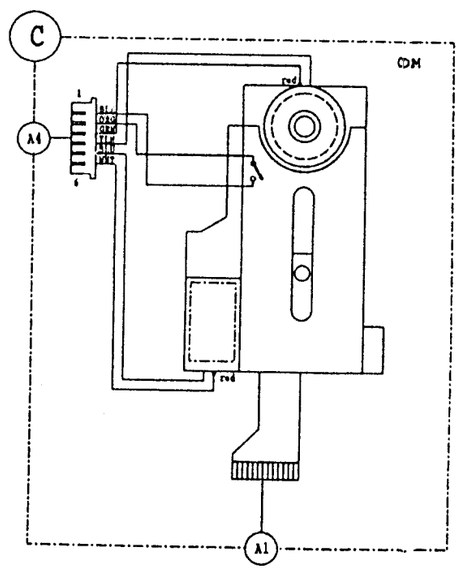
CD MECHANISM EXPLODED VIEW

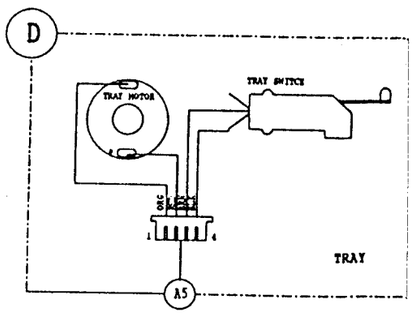


TRACK SIDE VIEW

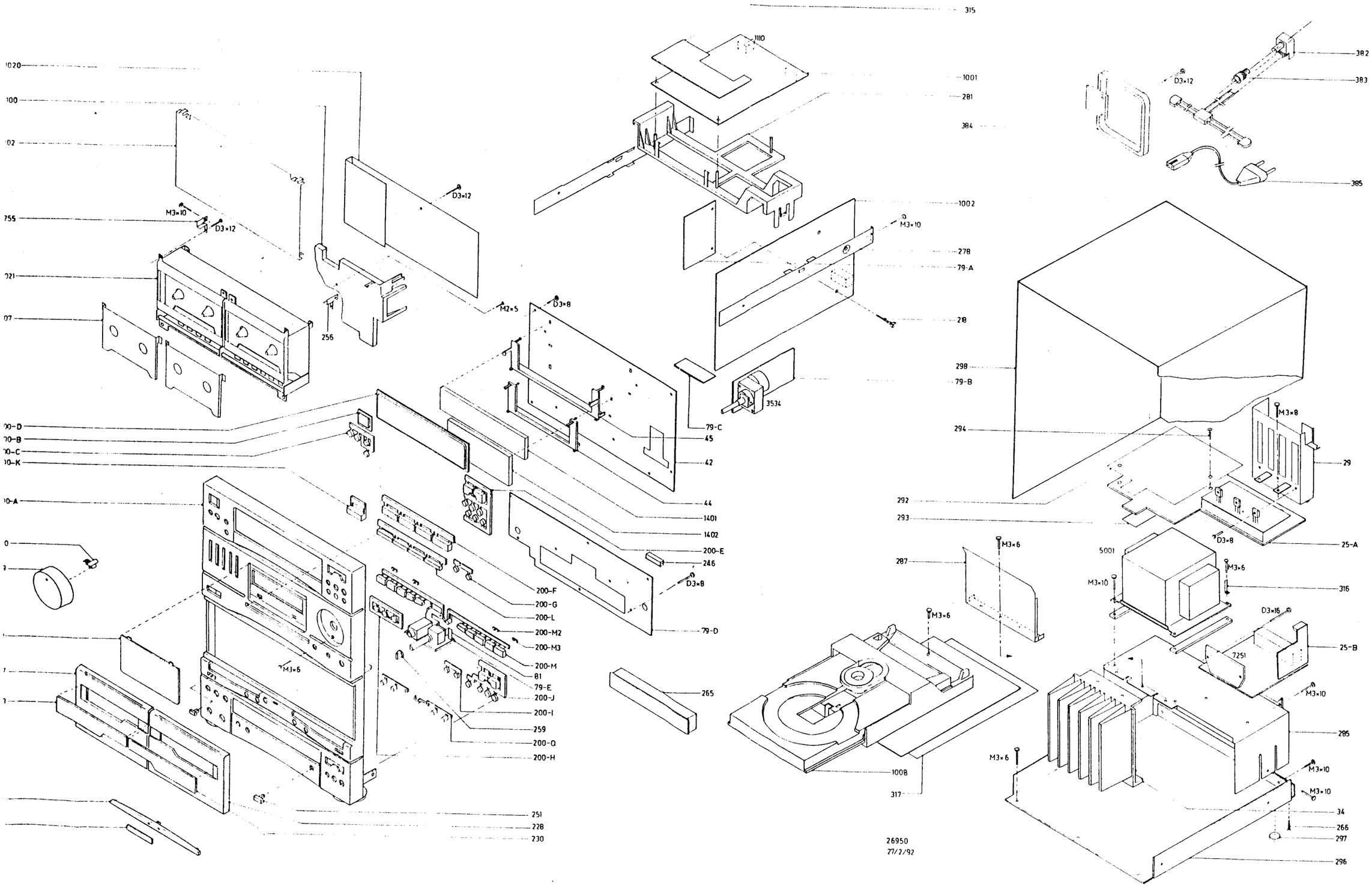








CENTRE UNIT EXPLODED VIEW



S 62 585

CENTRE UNI	
44	4822
45	4822
107	4822
200	4822
200	4822
213	4822
218	4822
219	4822
220	4822
227	4822
228	4822
229	4822
230	4822
251	4822
259	4822
265	4822
265	4822
266	4822
270	4822
270	4822
273	4822
273	4822
294	4822
297	4822
298	4822
298	4822
381	4822
382	4822
383	4822
384	4822
385 ⚠	4822
385 ⚠	4822
385 ⚠	4822
385 ⚠	4822
385 ⚠	4822
IFU	4822
IFU	4822

NOTE : ONLY THE ME
SERVICE PARTS.

CENTRE UNIT

44	4822 466 93152	
45	4822 466 93151	
107	4822 426 20213	
200	4822 426 51554	
200	4822 426 51571	-/21 only
213	4822 450 61921	
218	4822 466 93147	
219	4822 413 41723	
220	4822 466 70739	
227	4822 443 63679	
228	4822 443 63681	
229	4822 450 61906	
230	4822 450 61907	
251	4822 410 62042	
259	4822 413 41724	-/21 only
265	4822 444 60848	-/21 only
265	4822 444 60846	
266	4822 466 93148	
270	4822 454 12834	-/37 only
270	4822 454 12833	
273	4822 459 11087	-/37 only
273	4822 459 11086	
294	4822 466 93148	
297	4822 462 40683	
298	4822 426 20218	-/21 only
298	4822 426 20214	
381	4822 263 21047	-/37 only
382	4822 264 30265	-/37 only
383	4822 320 11094	-/37 only
384	4822 158 60622	
385 ⚠	4822 321 22474	-/25
385 ⚠	4822 321 10524	-/30
385 ⚠	4822 321 10776	-/22
385 ⚠	4822 321 10788	-/37
385 ⚠	4822 321 10831	-/20/21
IFU	4822 736 21454	
IFU	4822 736 21447	-/37 only

NOTE : ONLY THE MENTIONED PARTS ARE NORMAL SERVICE PARTS.

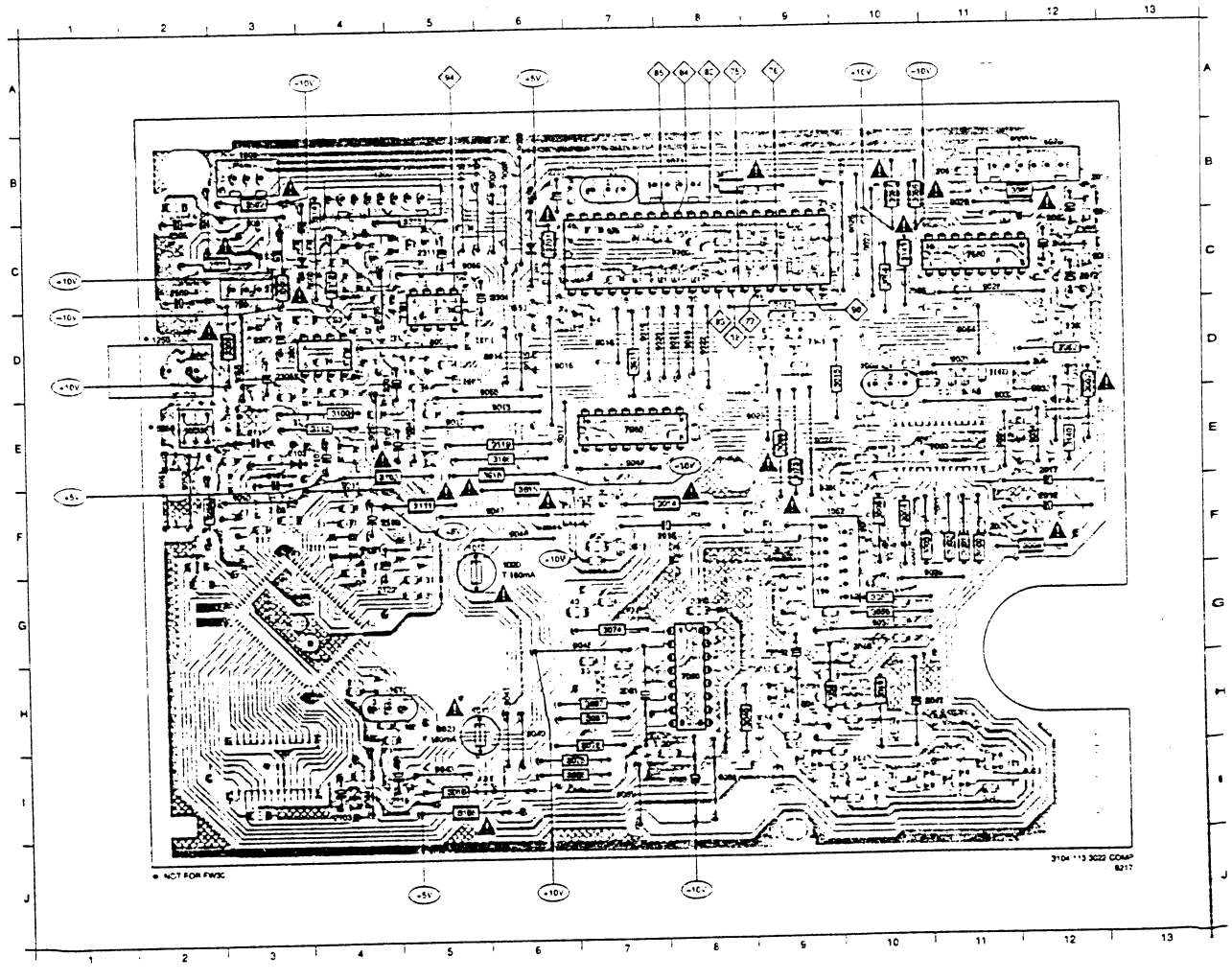
CD MECHANISM

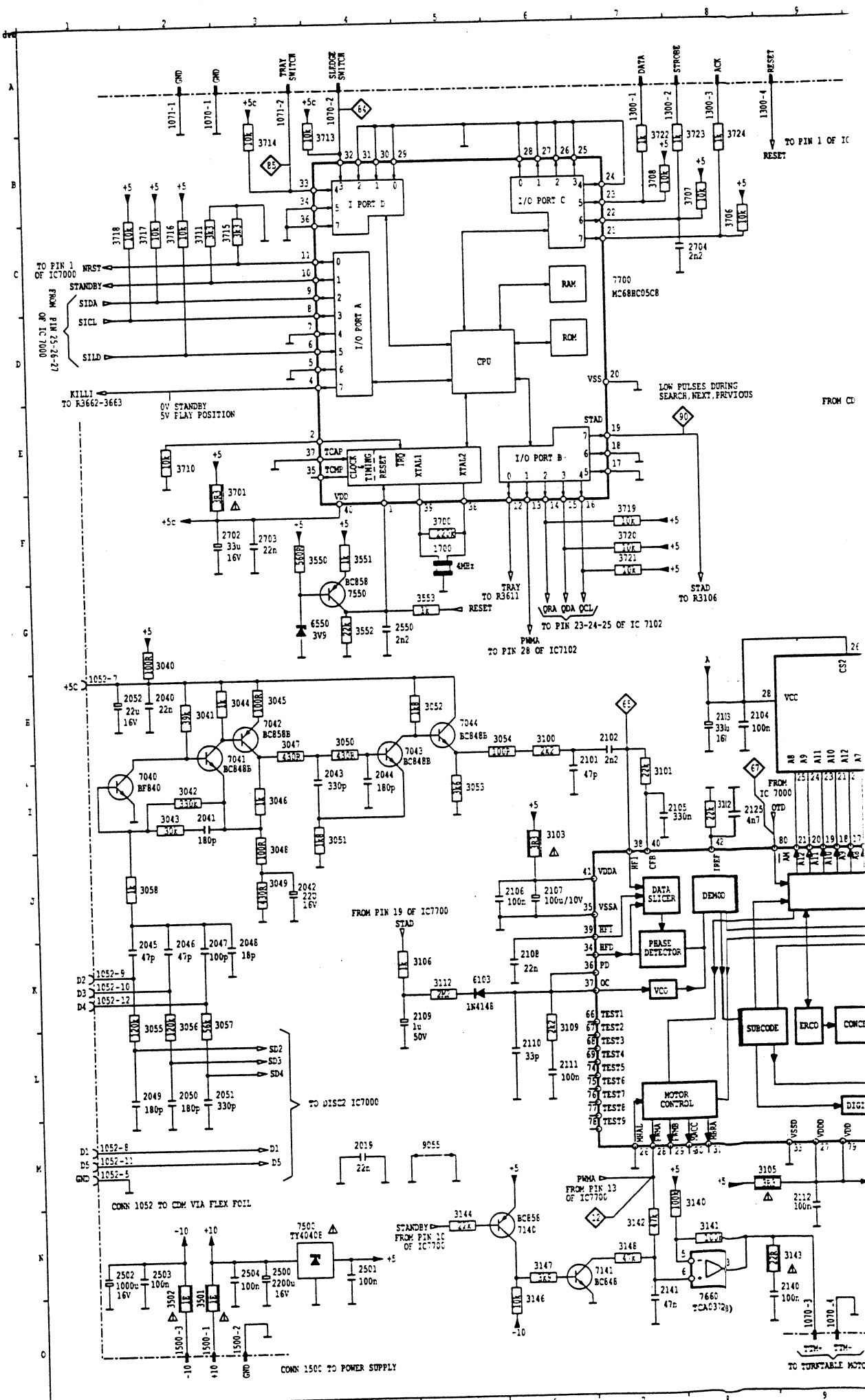
86	4822 528 81464	
87	4822 528 81465	
88	4822 325 60379	
89	4822 276 13222	
93	4822 444 60816	
96	4822 462 41902	
101	4822 444 50679	
102	4822 358 31168	
103	4822 691 30278	
104	4822 325 50215	
108	4822 402 61412	
109	4822 464 50895	
110	4822 444 50678	
111	4822 361 21492	

NOTE : ONLY THE MENTIONED PARTS ARE NORMAL SERVICE PARTS.

CD CHIP & COMPONENT LAYOUT

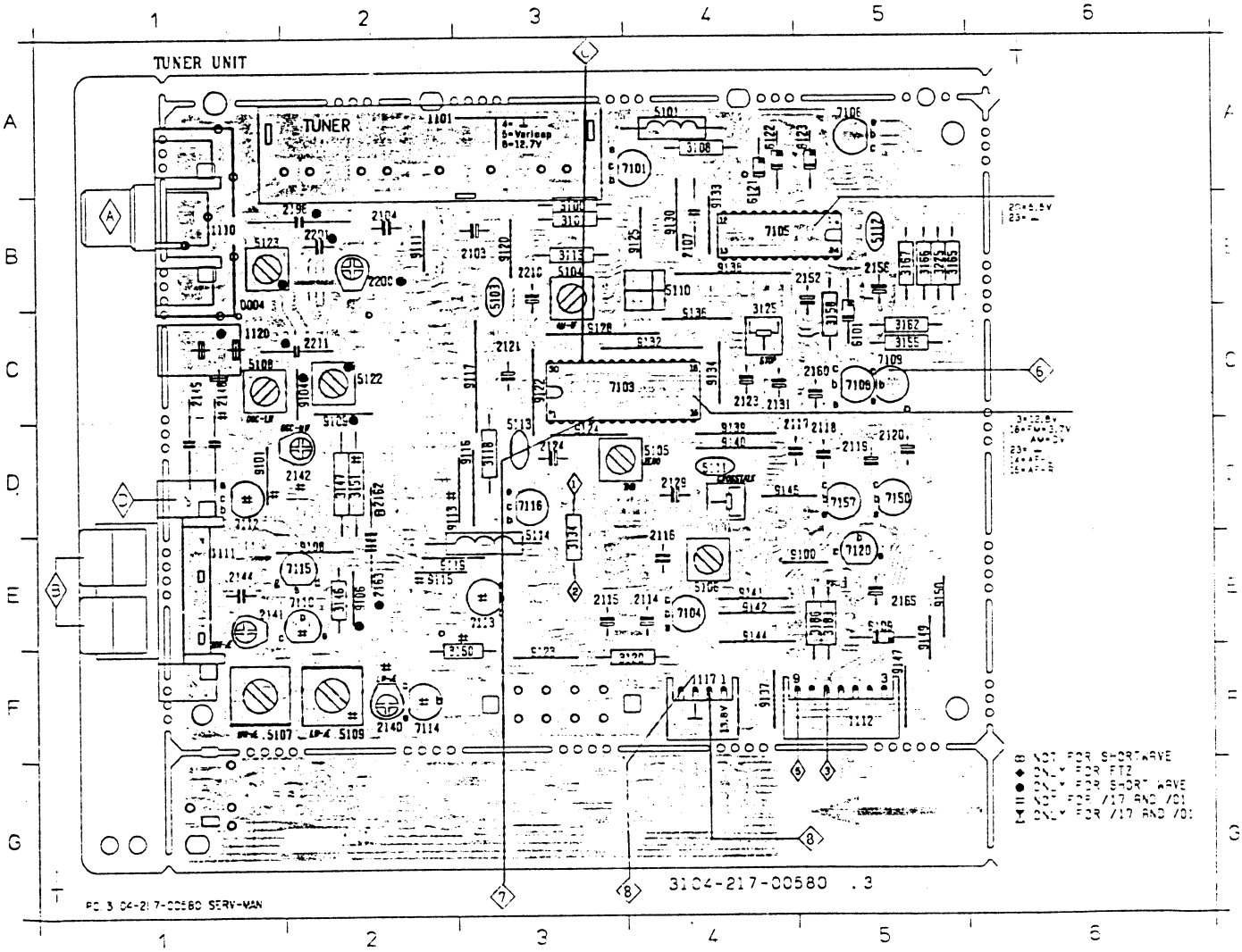
COMPONENT SIDE VIEW





3104 118 01001R-A
9218

0004 B1	2116 E4	2142 D2	2200 B2	3146 E2	3225 B5	5113 D3	7105 B4	7157 D5	9119 E2	9137 F4
1101 A2	2117 D5	2144 E1	2210 B3	3147 D2	5101 A4	5114 E3	7106 A5	9100 E5	9120 B3	9138 B4
1110 B1	2118 D5	2145 C1	2211 C2	3150 F3	5103 B3	5122 C2	7108 C5	9101 D1	9122 C3	9139 D4
1111 E1	2119 D5	2146 C1	3100 B3	3151 D2	5104 B3	5123 B1	7109 C5	9104 C2	9123 F3	9140 D4
1112 F5	2120 D5	2152 B5	3101 B3	3155 C5	5105 D4	6101 C5	7110 E2	9106 E2	9124 D3	9141 E4
1117 F4	2121 D3	2156 B5	3108 A4	3158 C5	5106 E4	6109 E5	7112 D1	9108 E2	9125 B4	9142 E4
1120 C1	2123 D4	2160 C5	3113 B3	3162 C5	5107 F1	6121 A4	7113 E3	9109 D2	9128 C3	9144 E4
2103 B3	2124 D3	2162 D2	3118 D3	3165 B5	5108 C1	6122 A4	7114 F2	9111 B2	9130 B4	9146 D4
2104 B2	2129 D4	2163 E2	3120 F4	3166 B5	5109 F2	6123 A5	7115 E2	9113 D2	9132 C4	9147 F5
2107 B4	2131 C4	2165 E5	3125 C4	3167 B5	5110 B4	7101 A4	7116 D3	9115 E2	9133 B4	9149 E5
2114 E4	2140 F2	2198 B2	3131 D4	3183 E5	5111 D4	7103 C3	7120 E5	9116 D3	9134 C4	9150 E5
2115 E3	2141 E1	2200 B2	3134 E3	3186 E5	5112 B5	7104 E4	7150 D5	9117 C3	9136 C4	



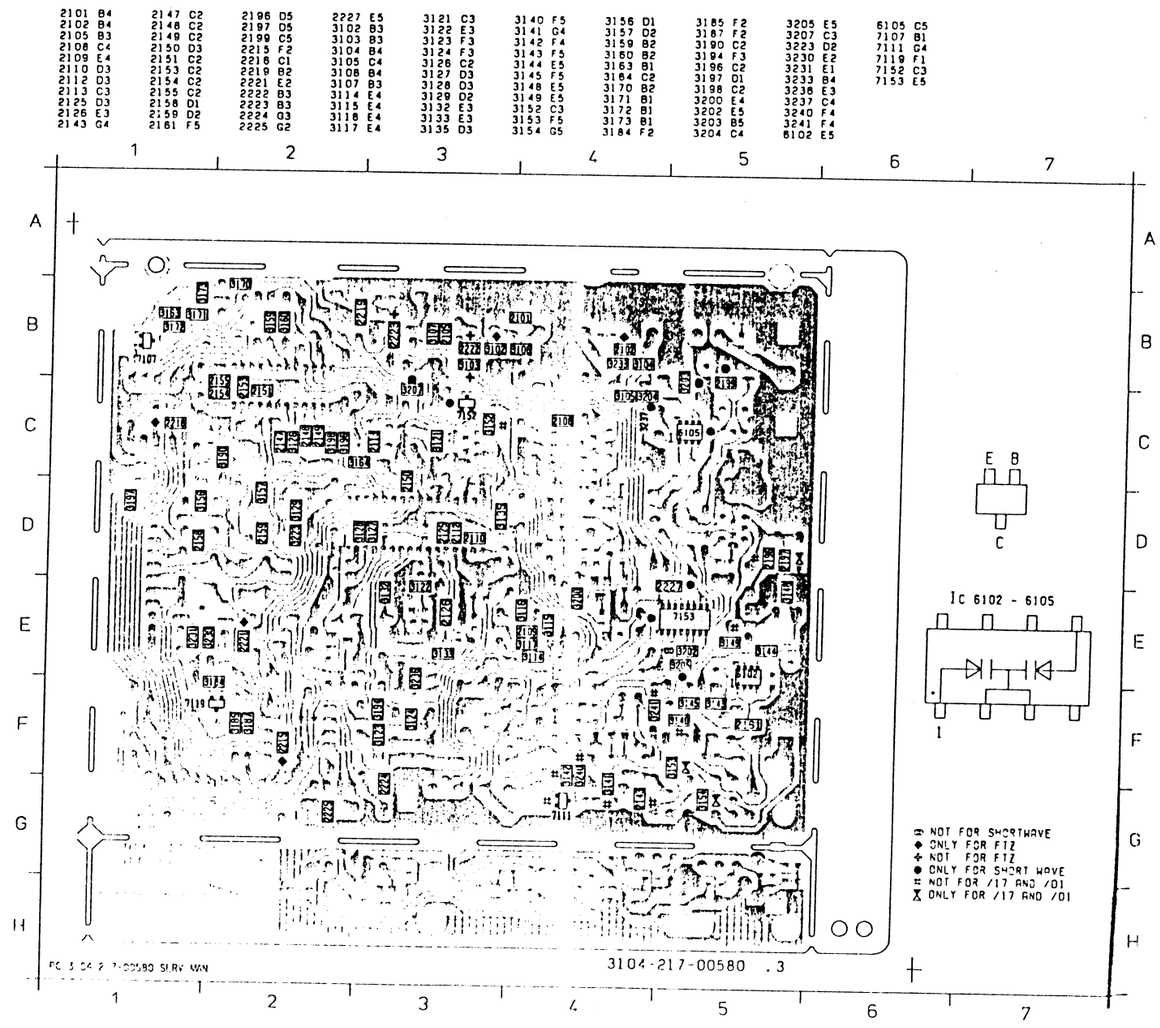
TUNER ADJUSMENT

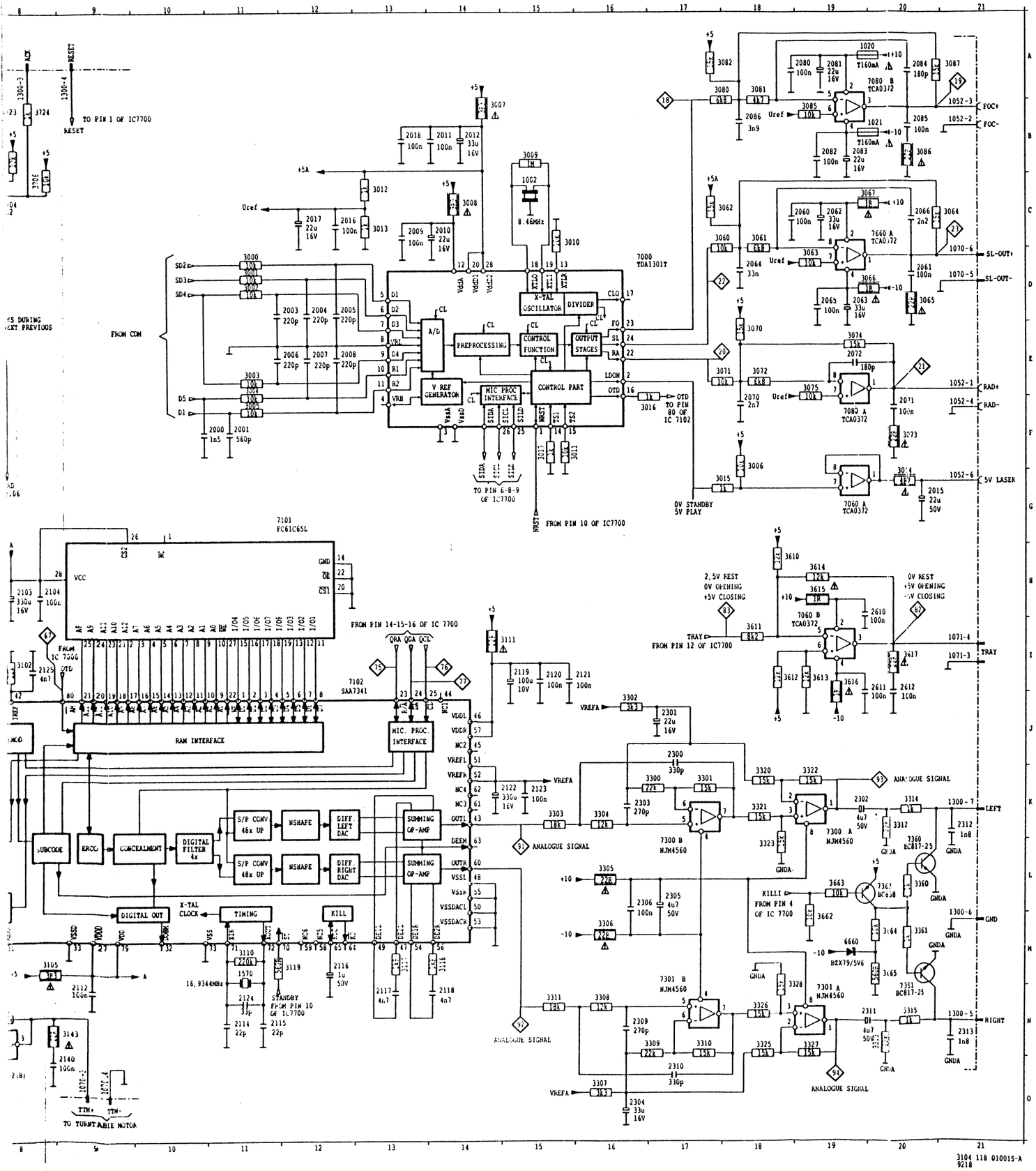
SK...	FREQUENCY	I/P	DISPLAY	ADJUST	O/P	SCOPE/METER
Varicap alignment						
FM 87.5–108MHz			108MHz 87.5MHz	check	◇6	8V ± 1V 1.65V ± 0.35V
LW + 153–279kHz			279kHz 153kHz	5108 check		8.5V 1V ± 0.3V
MW 522–1611kHz (530–1700kHz)			1611kHz (1710kHz)	2142 (5108)		8.5V (8.5V)
			522kHz (530kHz)	check		1.1V ± 0.3V (1.0V ± 0.3V)
FM						
FM	98MHz mod = 1kHz Δf = 75kHz 1mV	◇A	98MHz	5105	◇1 – ◇2	0V ± 0.02V
	98MHz 90% Left 9% Pilot 1mV		98MHz	3131	◇4 Right	min.
				check	◇3	Lo
	98MHz mod = 1kHz Δf = 75kHz 15µV		98MHz	3125	◇5	Hi ⌐ ¬ Lo
AM–IF						
MW	450kHz Δf = 10kHz 50Hz	◇C	1494kHz (1600kHz)	5104	◇7	Symmetrical max lo
AM–RF						
LW *	155kHz 270kHz	◇B	155kHz 270kHz	5109 2140	◇8	max.
MW *	558kHz (560kHz)		558kHz (560kHz)	5107		
	1494kHz (1600kHz)		1494kHz (1600kHz)	2141		

* Mod 1kHz 30% AM
(..) For Grid = 10kHz
\+ For LW version only

↕ Repeat

TUNER CHIP & COMPONENT LAYOUT





1002	C15	3051	I 4
1020	A20	3052	H 5
1021	B20	3053	I 5
1052	K 1	3054	H 6
1052	K 1	3055	L 2
1052	M 1	3056	K 2
1052	M 1	3057	K 3
1052	K 1	3058	J 5
1052	M 1	3060	C18
1052	H 1	3061	C18
1052	B21	3062	C17
1052	G21	3063	D19
1052	F21	3064	C20
1052	E21	3065	D20
1052	B21	3066	D19
1070	O 9	3067	C19
1070	O 9	3070	E18
1070	A 4	3071	E18
1070	A 2	3072	E18
1070	D21	3073	F20
1070	D21	3074	E19
1071	A 3	3075	E19
1071	A 2	3080	A18
1071	I21	3081	A18
1071	I21	3082	A17
1300	A 9	3085	B19
1300	A 8	3086	B20
1300	A 8	3087	A21
1300	A 7	3100	H 6
1300	K21	3101	I 7
1300	M21	3102	I 8
1300	M21	3103	I 6
1500	O 2	3105	M 8
1500	O 2	3106	K 5
1500	O 2	3107	L 6
1570	M11	3110	M11
1700	F 5	3111	I14
2000	F11	3112	K 5
2001	F11	3117	M13
2003	D12	3118	M14
2004	D12	3119	M12
2005	D12	3140	N 8
2006	E12	3141	N 8
2007	E12	3142	N 7
2008	E12	3143	N 9
2009	C13	3144	N 5
2010	C14	3146	O 6
2011	B14	3147	N 9
2012	B14	3148	M 7
2015	G20	3300	K16
2016	C12	3301	K17
2017	C12	3302	J16
2018	B13	3303	K15
2019	M 4	3304	K16
2040	H 2	3305	L16
2041	I 4	3306	M16
2042	J 3	3307	O16
2043	I 4	3308	M16
2044	I 4	3309	M16
2045	K 1	3310	M17
2046	K 2	3311	M15
2047	K 2	3312	K20
2048	K 3	3313	M20
2049	L 1	3314	K20
2050	L 2	3315	M20
2051	L 2	3320	K18
2052	H 1	3321	K18
2060	C18	3322	K19
2061	D20	3323	L18
2062	C19	3325	M18
2063	D19	3326	M18
2064	D18	3327	M19
2065	D19	3328	M18
2066	C20	3360	L20
2070	F18	3361	M20
2071	F20	3501	O 2
2072	E19	3502	O 2
2080	A19	3550	F 3
2081	A19	3551	F 4
2082	B19	3552	G 4
2083	B19	3553	G 5
2084	A20	3610	H18
2085	B20	3611	I18
2086	B18	3612	I18
2101	I 6	3613	I19
2102	H 7	3614	H19
2103	H 8	3615	H19
2104	H 8	3616	I19
2105	I 7	3617	I20
2106	J 6	3662	M19
2107	J 6	3663	L19
2108	K 6	3664	M20
2109	K 5	3665	M20
2110	L 6	3700	F 5
2111	L 6	3701	F 4
2112	M 6	3706	C 8
2114	N11	3707	B 8
2115	N11	3708	B 7
2116	M12	3710	E 2
2117	N13	3711	C 2
2118	N14	3713	B 4
2119	I15	3714	B 3
2120	I15	3715	C 3
2121	I15	3716	C 2
2122	K14	3717	C 2
2123	K15	3718	C 1
2124	N11	3719	F 7
2125	I 8	3720	F 7
2140	O 9	3721	F 7
2141	O 7	3722	B 7
2300	J17	3723	B 8
2301	J17	3724	B 8
2302	K19	3103	K 5
2303	K16	3550	G 4
2304	O16	6660	M19
2305	L17	7000	D16
2306	L16	7040	I 2
2309	N16	7041	I 2
2310	O17	7042	N 3
2311	M19	7043	M 4
2312	K21	7044	M 5
2313	M21	7060	I19
2500	M 3	7060	G19
2501	M 4	7080	F19
2502	M 1	7080	A20
2503	M 2	7101	G11
2504	M 3	7102	I12
2550	G 4	7140	N 6
2610	H20	7141	N 6
2611	I20	7300	L17
2612	I20	7300	K19
2702	F 2	7301	M17
2703	F 3	7301	M19
2704	C 8	7360	L20
3000	D11	7361	M20
3001	D11	7362	L20
3002	D11	7500	M 3
3003	E11	7550	G 4
3004	E11	7660	G 8
3005	F11	7668	C20
3006	F18	7700	C 7
3007	B14	9055	M 5
3008	C14		
3009	B15		
3010	C15		
3011	F16		
3012	C17		
3013	C13		
3014	G20		
3015	G18		
3016	F16		
3017	E15		
3040	G 2		
3041	H 2		
3042	I 2		
3043	I 2		
3044	M 3		
3045	N 3		
3046	I 3		
3047	H 3		
3048	J 3		
3049	J 3		
3050	M 4		

12 — 10us/DIV — 0V — ± 44,4us — play mode — stand by +5V

18 — 10us/DIV — service mode SERVO xx — 5V / 0V — FM not moving — service mode FOCUS — 5V / 0V — FM is moving

19 — ACTIVITY DURING PLAY

20 — 0,5us/DIV — service mode MOTOR — 5V / 0V — no tracking control — service mode RADIAL — 5V / 0V — tracking control

21 — ACTIVITY DURING PLAY

22 — 0,5us/DIV — service mode SLEDGE — 5V / 0V — sledge not moving — 5V / 0V — sledge out — 5V / 0V — sledge in

23 — SERVICE POSITION SLEDGE
SL-OUT -2.6V
SL-IN +2,6V

45 — 0,5us/DIV — eyepattern — 2.5V

67 — SERVICE POSITION SLEDGE, FOCUS, MOTOR: 0V
SERVICE POSITION RADIAL: 5V

75 — 10ms/DIV — play mode — asynchronous uP dependent — QRA

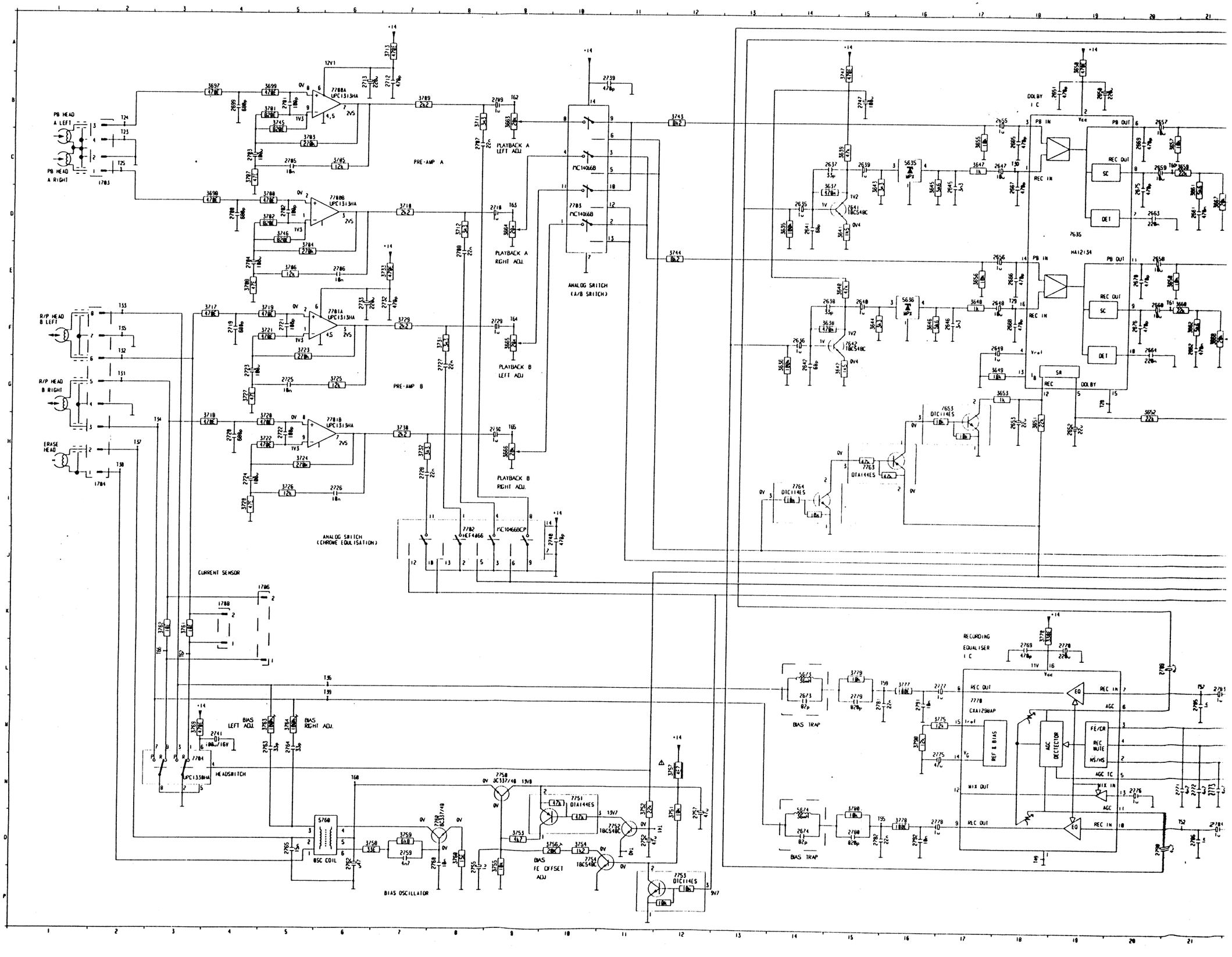
76 — 0.2ms/DIV — 10 X 8 bits — QCL

77 — continue data — QDA

84 — SERVICE POSITION SLEDGE
0V REST POSITION
+5V WHEN SLEDGE IS MOVING

85 — +5V REST POSITION OF TRAY
0V WHEN OPENING OR CLOSING

TAPE CORE CIRCUIT II



TUNER

AM-IF
FM-IF
FM-DETECTOR
SEARCH LEVEL
CROSSTALK
ANTI BIRDY FILTER
AM-OSC
LOOPFILTER
FM osc 98,2-118,7MHz
AM OSC from 7103 pin 30
HIGH=COUNT ENABLE
OPTION MATRIX
SHIFT REGISTER LATCH
REF DIVIDER
PHASE DETECT
Universal counter
DECODER
MUTE
LED DRIVE
TRIG
FF 38KHz
FF 19 KHz 90°
FF 19 KHz 0°
PILOT DET
FM DET
FM LEVEL DET
COMP
SITRED SWITCH
PD
ALC
AM OSC
AM MIX
AM IF
FM IF
V REG
AM RF
AM DET
AGC
VCO
IF BUF
7103 LA1851N
7105 LC7218
7138 BF245B
7112 2SC1047
7113 2SC1815
7104 BC858C
7107 BC848B
7108 BC548C
7109 BC548C
7120 BC548C
7150 BC338-40
7167 BC338-40
7119 BC858B
7106 BC558C
JST 1117
7-FOLD JST 1112
LEFT
GND
RIGHT
+V
MUTE
MUTE AF-OUT
CROSSTALK
STSIG
MUTE
STEREO
DE
COUNTER
DATA
CLOCK
LOW = VALID SIGNAL
MUT = LOW
STEREO = LOW
2nd stop : 1st stop
PND = LOW 2ND STOP from 7105 pin 17
to R3128 to R3196 2ND STOP FM/AM
to R3192 VCO KILL
KILL-LOW
FM/AM
Mono = low
During communication micro processor in frontpanel
0v = no communication
5W-HIGH
VT varicap
LW-LOW
LW
VREF 2.4v
7,2MHz
455kHz
10,7MHz

OPTION DIODES

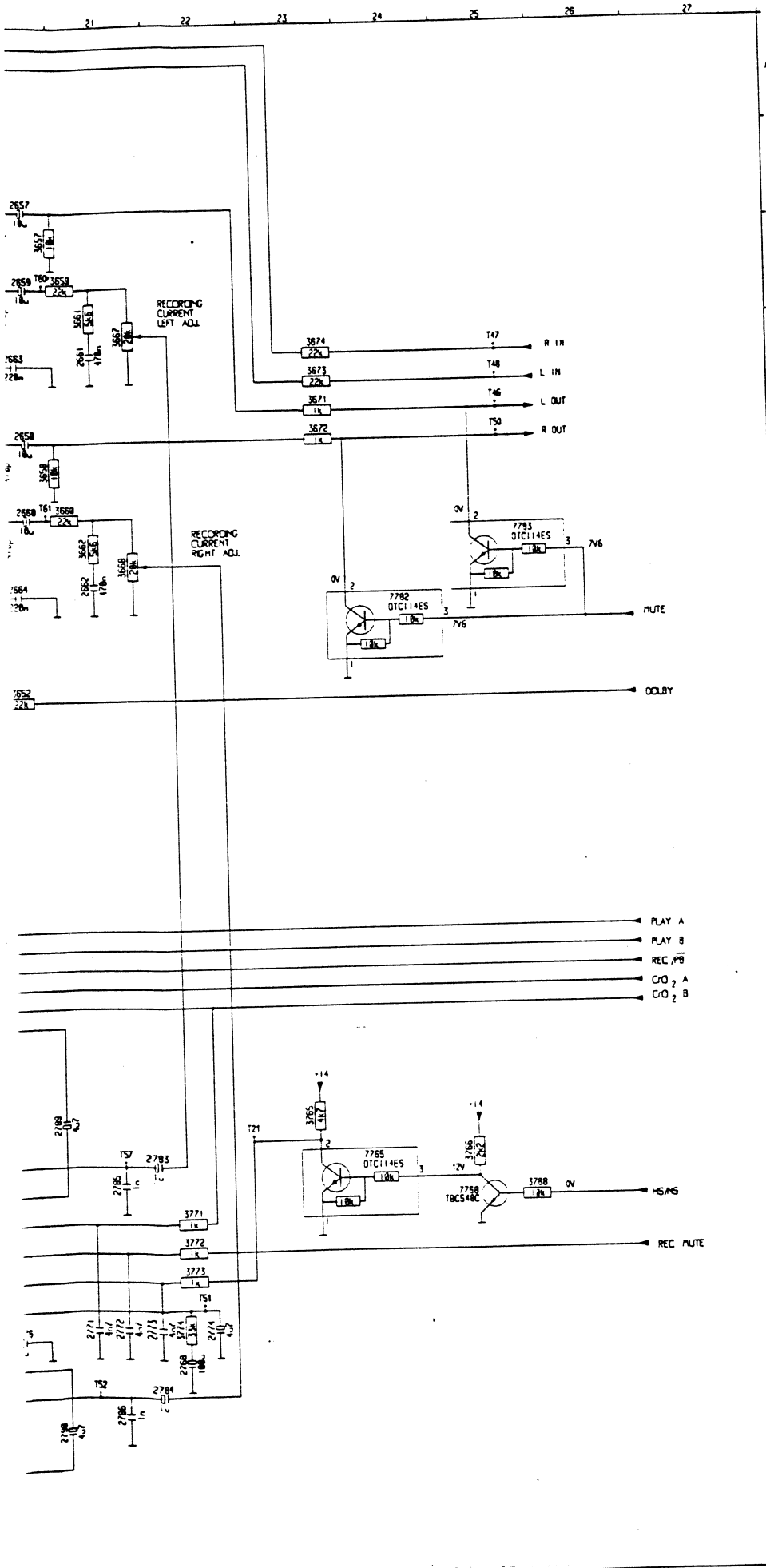
	6121	6122	6123
EUROPE /00 /05	-	-	-
USA /17	X	-	X
OVERSEAS /01	-	X	-
EAST EUROPE/14	X	X	X
JAPAN /08	-	X	X
EUROPE+SW	X	-	-
OVERSEAS+SW	X	X	-

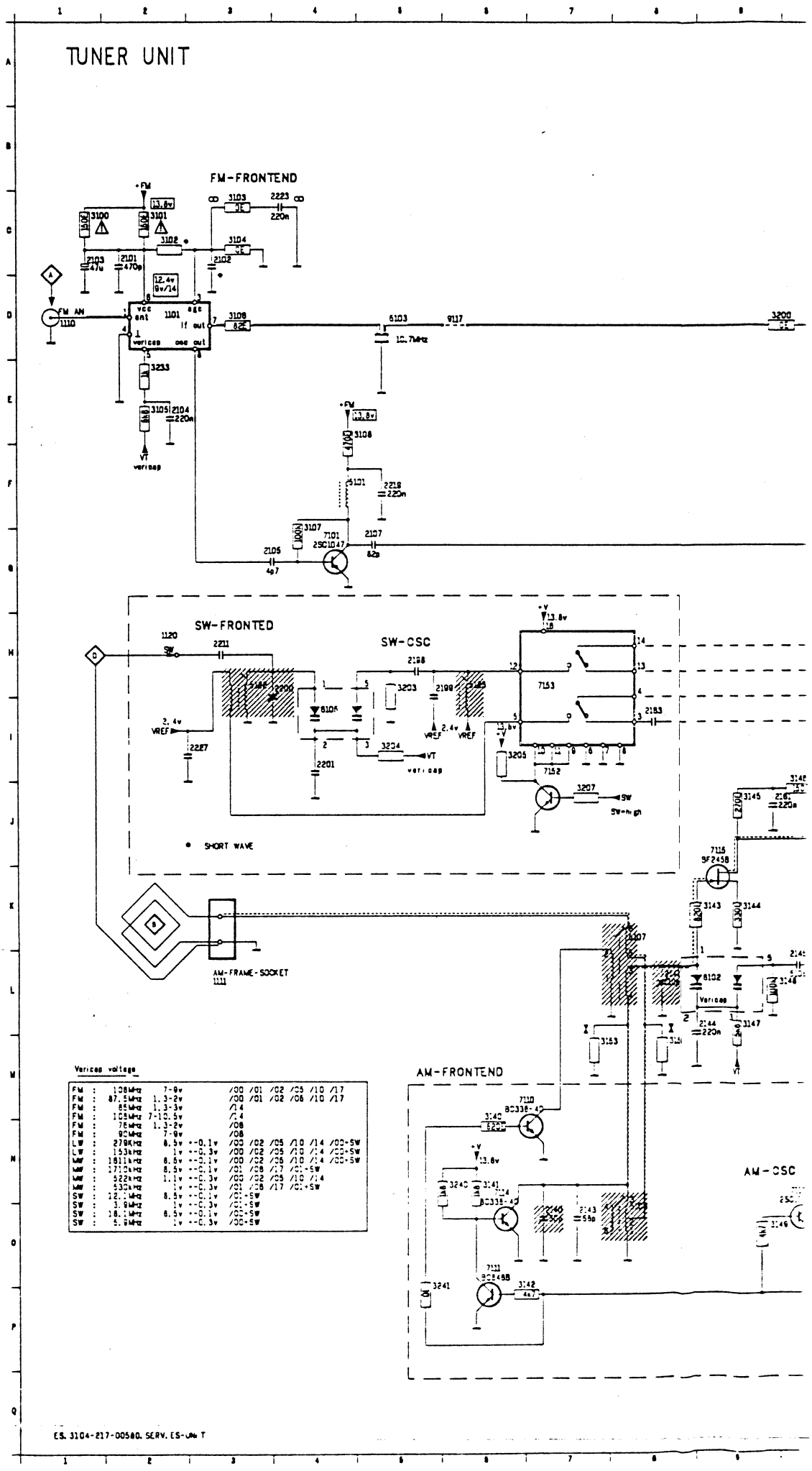
X = DIODE MOUNTED

o NOT FOR SHORT WAVE
* NOT FOR /17 AND /01
ONLY FOR /17 AND /01
ONLY FOR SHORT WAVE
+ ONLY FOR FTZ
oo NOT FOR FTZ

+ FM
+ AM
+ FM sign
+ AM sign

1101 D 2 7101 D 4
2101 C 2 7103 F13
2102 C 3 7104 B20
2103 C 1 7105 N18
2104 E 2 7106 L28
2105 B 4 7107 M26
2107 B 5 7108 P18
2108 C10 7109 P18
2109 C12 7110 N 7
2110 D12 7111 D 6
2112 B17 7112 N10
2113 B14 7113 N18
2114 C20 7114 K 6
2115 C21 7115 J 9
2116 B22 7118 D11
2117 E24 7119 G27
2118 F24 7120 M24
2119 E25 7150 F28
2120 F25 7152 I 7
2121 F11 7153 K 7
2123 B13 7157 E28
2124 D18 8116 D10
2125 G13 8117 D 8
2126 G14
2129 H17
2131 B20
2140 B 7
2141 L 8
2142 B10
2143 B 7
2144 L 8
2145 L10
2146 M10
2147 L18
2148 L18
2149 L18
2150 L20
2151 M18
2152 M15
2153 L21
2154 M16
2155 M15
2156 P18
2158 B17
2159 B18
2160 B19
2161 J 9
2162 J11
2163 I 8
2165 M25
2196 M10
2197 M11
2198 N 5
2199 N 5
2200 K 5
2201 I 4
2210 C17
2211 K 9
2215 G22
2216 L21
2219 F 5
2221 B12
2222 P18
2223 C 4
2224 E28
2225 F28
2227 I 2
3100 C 1
3101 C 2
3102 C 2
3103 C 3
3104 C 3
3105 E 2
3106 D 3
3107 F 4
3108 E 4
3113 B11
3114 C11
3115 D11
3116 D11
3117 C11
3118 C11
3120 A17
3121 B15
3122 B18
3123 C21
3124 B22
3126 B24
3127 E24
3128 F24
3129 D20
3130 D17
3133 D14
3134 G17
3135 F11
3140 N 6
3141 N 6
3142 B 7
3143 K 8
3144 K 9
3145 J 8
3146 I10
3147 L 8
3148 L 8
3149 B 8
3150 D16
3151 P18
3152 P17
3153 N 7
3154 N 8
3155 D19
3156 P19
3157 D18
3158 P18
3159 P21
3160 P22
3162 L17
3163 N28
3164 L20
3165 L21
3166 L22
3167 L21
3170 M25
3171 N25
3172 N28
3173 N27
3183 N27
3184 N27
3185 N27
3186 N24
3187 D25
3190 L17
3194 C20
3196 B22
3197 L27
3198 R21
3200 D10
3202 H11
3203 N 5
3204 I 5
3205 I 8
3207 J 7
3223 C19
3225 L22
3230 E27
3231 F27
3233 E 2
3236 D14
3240 N 5
3241 B 5
5104 C18
5105 B18
5106 M16
5107 K 8
5111 G18
5112 M16
8101 L17
6102 L 8
6105 I 4
6109 G25
6121 D22
6122 D21
6123 D21

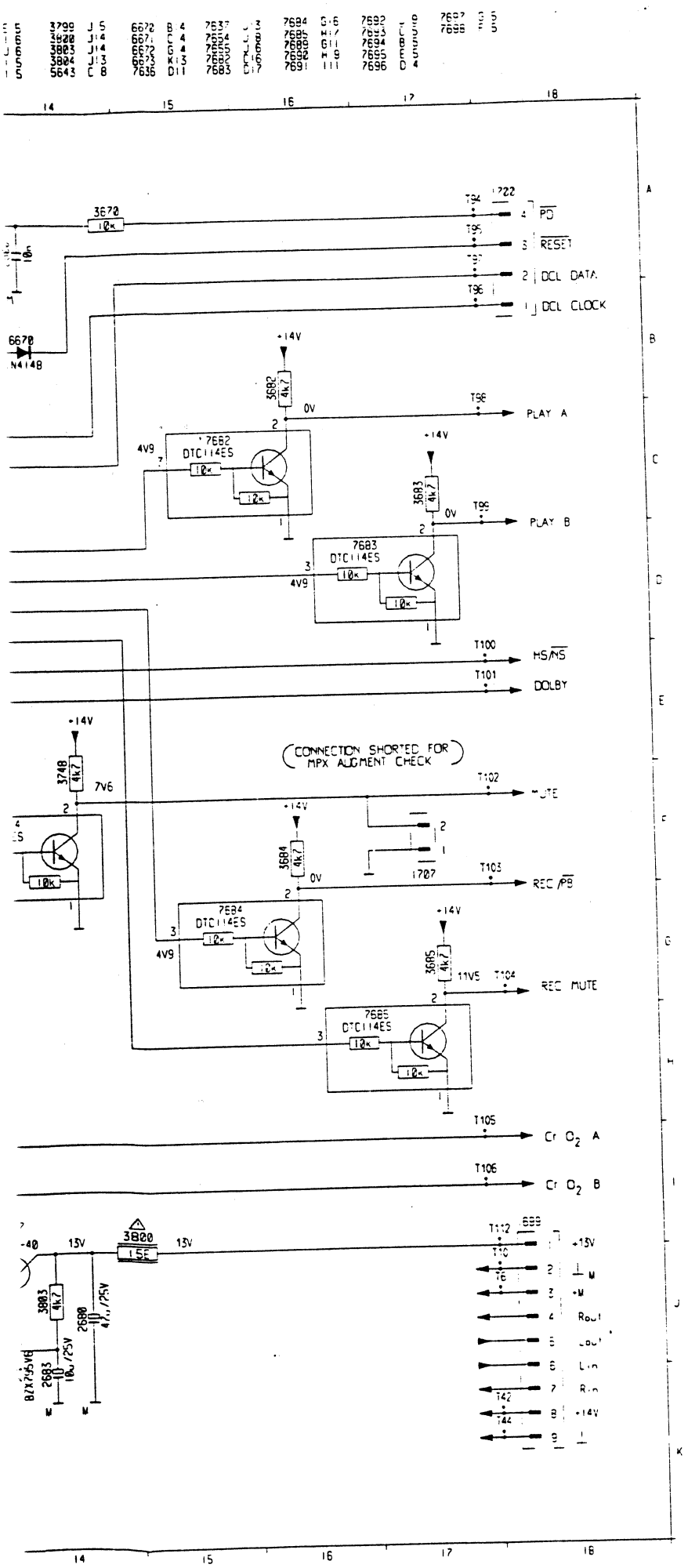

RECORDING CURRENT LEFT ADJ.
RECORDING CURRENT RIGHT ADJ.
R IN
L IN
L OUT
R OUT
MUTE
DOLBY
PLAY A
PLAY B
REC /PB
C/O2 A
C/O2 B
HS/MS
REC MUTE
7782 DTC114ES
7783 DTC114ES
7765 DTC114ES
7758 BC548C


TUNER UNIT
FM-FRONTEND
SW-FRONTED
SW-OSC
SHORT WAVE
AM-FRAME-SOCKET
1111
AM-FRONTEND
AM-OSC
Varicap voltage
ES. 3104-217-00580. SERV. ES-Unit

APE ADJUSTMENT TABLE

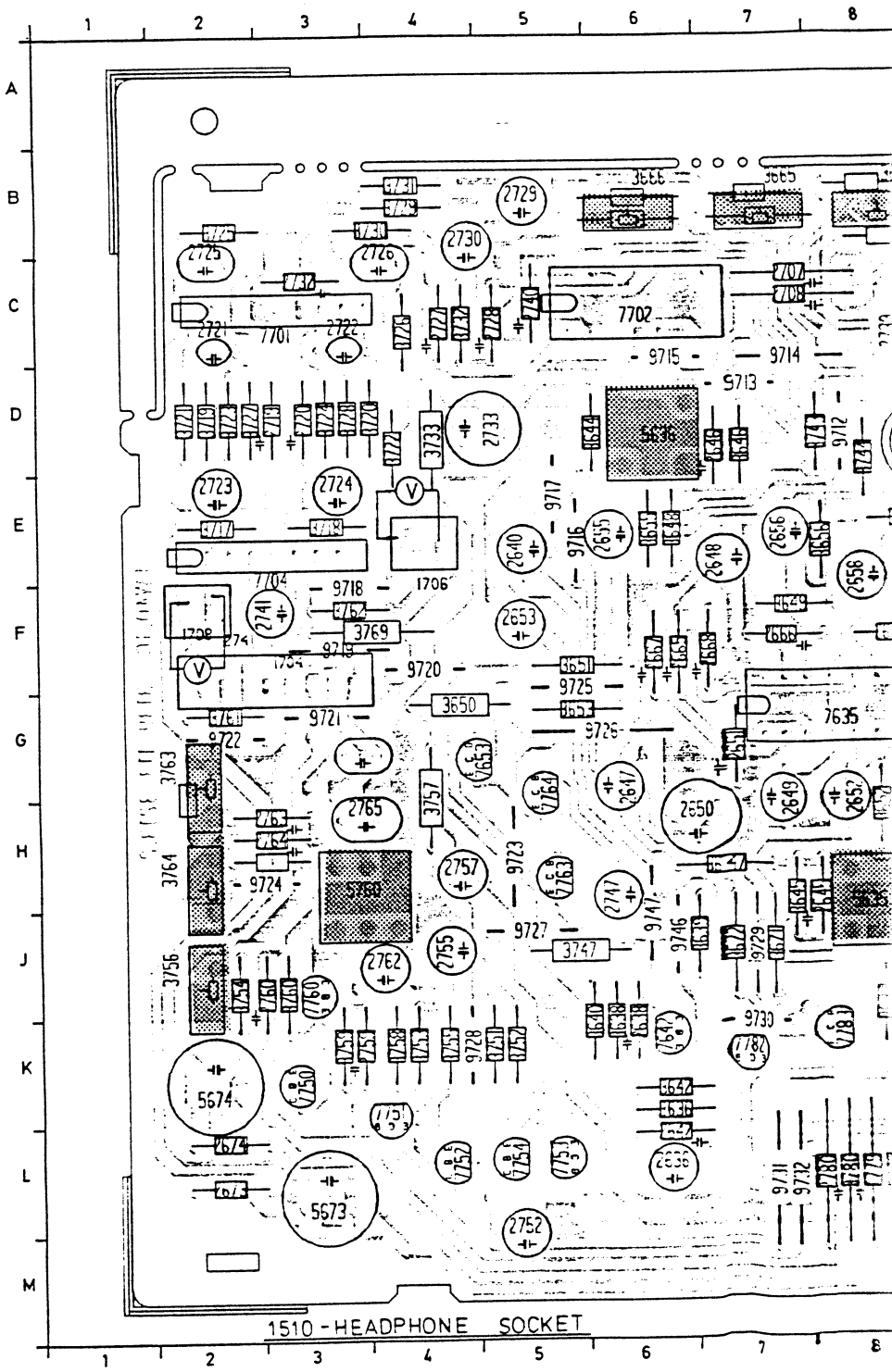
Adjustment	Cassette signal	Injection point	Recorder position PB Deck	Recorder position R/P Deck	Measure at	Measure Across	Read on	Adjust with	Adjust to
Motor speed	3150Hz SBC 420*		High speed dubbing		1510		Wow and Flutter meter	3784	5670Hz ± 85Hz
			Play Fwd	-	1510			3783	3150Hz ± 45Hz #1
Dolby Level (Playback)	400Hz TTC 130***		Play Fwd	-	T46		mV-meter	3663	300mV
					T50			3664	
			-	Play Fwd	T46			3665	
					T50			3666	
Azimuth	12.5kHz SBC 420*		Play Fwd	-	1510		mV-meter	Left hand screw play head	Max. L = R
			Play Rev	-	1510			Right hand screw play head	
			-	Play Fwd	1510			Left hand screw R/P head	
			-	Play Rev	1510			Right hand screw R/P head	
Bias current	SBC 419**		-	Record Chrome		3761	mV-meter	3763	7.0mV
						3762		3764	
	SBC 420*		-	Record		3761 or 3762		3756	4.4mV #2
Recording playback level	400Hz TCC 130*** and SBC 419**		Play	Record Chrome		3761	mV-meter	3667	0.68mV #3
						3762		3668	
			-	Playback	T46			check	300mV ± 17mV
					T50				
	400Hz TCC 130*** and SBC 420*		Play	Record		3761		3667	0.45mV #3
						3762		3668	
			-	Playback	T46			check	300mV ± 17mV
					T50				
Oscillator Frequency	SBC 420*			Record		3761	Frequency counter	5760	88kHz ± 4kHz
Multiplex Filter	400Hz	T48	-	Record	T46		mV-meter	Adjust Generator	300mV
		T47			T50				
	19kHz	T48			T46			5635	min.
		T47			T50			5636	< 3mV

* SBC 420 : 4822 397 30071
** SBC 419 : 4822 397 30069
*** TCC 130 : 4822 397 30144 (dolby level adj, 200nWB/m)
#1 The wow and flutter value should not exceeds 0.4% DIN.
#2 Adjustment for Chrome must be done before Ferro.
#3 Repeat until Rec/Playback level is achieved.

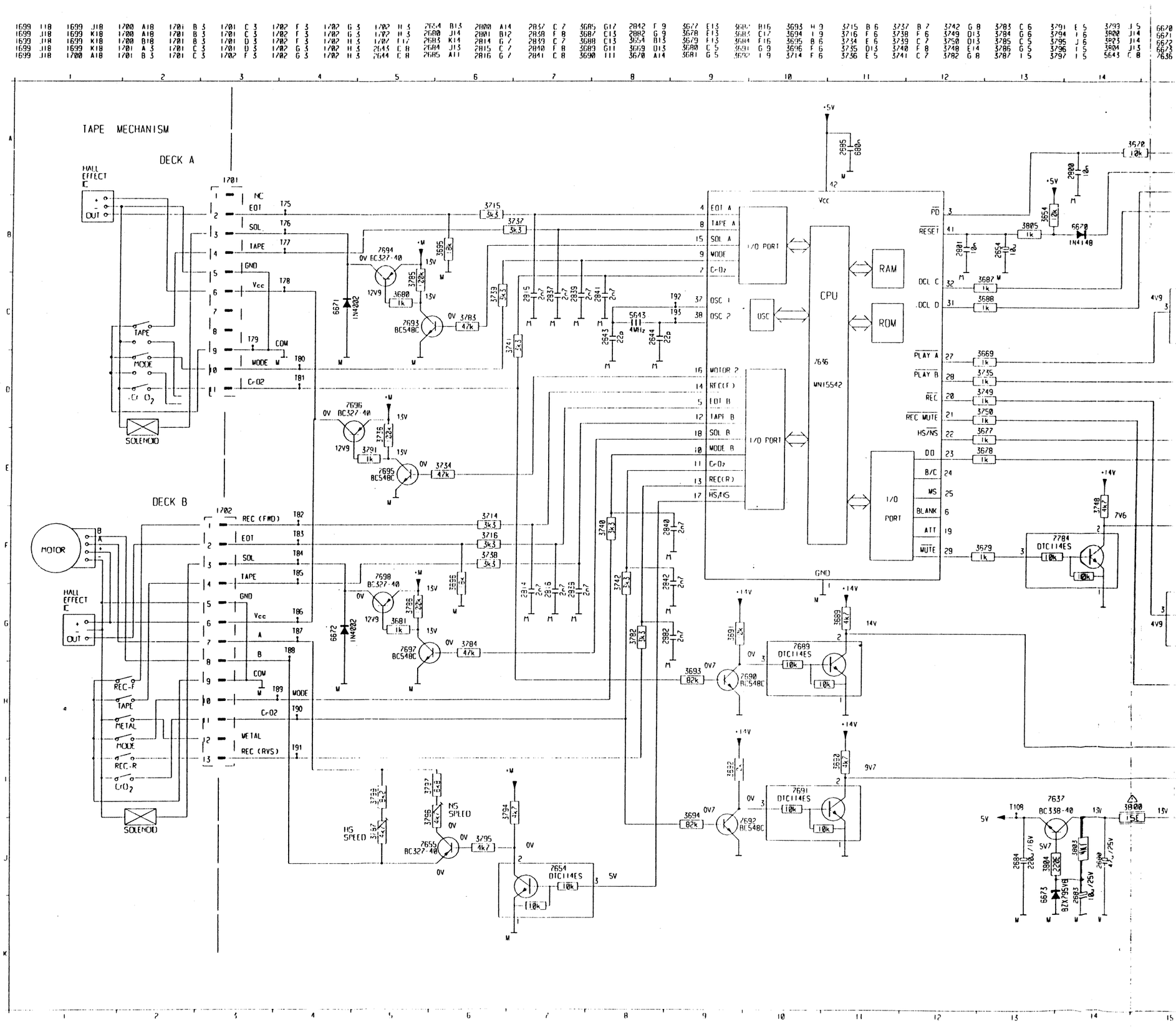

3670
10k
6670
N4148
+14V
3682
4k7
0V
7682
DTC114ES
4V9
10k
12k
3683
7683
7684
DTC114ES
3685
11V5
7685
T94
T95
T96
T99
T100
T101
T102
T103
T104
T105
T106
T112
PD
RESET
DCL DATA
DCL CLOCK
PLAY A
PLAY B
HS/MS
DOLBY
MUTE
REC /PB
REC MUTE
Cr O2 A
Cr O2 B
+15V
CONNECTION SHORTED FOR MPX ALIGMENT CHECK
3748
7V6
3684
1707
3800
15E
15V
3803
2680
2683
M

TAPE CORE COMPONENT LAYOUT

1699	M11	2643	K22	2659	G9	2680	L24	2712	C13	2739	C8	2771	J11	2787	J11	3646
1700	J15	2644	K22	2660	E9	2683	H24	2713	C12	2740	C5	2772	J11	2789	J10	3647
1701	B20	2645	H8	2661	F10	2684	H24	2719	D3	2741	F3	2773	J11	2790	H10	3648
1702	B22	2646	D7	2662	F10	2685	H23	2720	D3	2747	J6	2774	J13	2791	J14	3649
1703	E12	2647	G6	2663	H9	2699	E13	2721	C2	2752	L5	2775	G11	2792	H14	3650
1704	F3	2648	E7	2664	E8	2700	E13	2722	C3	2755	J4	2776	G10	3635	J10	3651
1706	E4	2649	H7	2665	F6	2701	D14	2723	E2	2757	H4	2777	J13	3636	K6	3652
1708	F2	2650	H7	2666	F7	2702	D12	2724	E3	2759	K3	2778	G13	3637	J8	3653
2635	J10	2651	G7	2667	F6	2703	E13	2725	B2	2760	J3	2779	L8	3638	K6	3654
2636	L6	2652	H8	2668	F7	2704	E12	2726	B4	2762	J4	2780	L8	3639	J6	3655
2637	J8	2653	F5	2669	G9	2705	C14	2727	C4	2763	H3	2781	J14	3640	K6	3656
2638	K6	2654	J23	2670	F8	2706	C12	2728	C5	2764	H3	2782	H14	3641	J9	3657
2639	J9	2655	E6	2673	L2	2707	C7	2729	B5	2765	H3	2783	H13	3642	K6	3658
2640	E5	2656	E7	2674	L2	2708	C7	2730	B4	2768	K11	2784	F11	3643	J9	3659
2641	J9	2657	H9	2675	G9	2709	C13	2732	B3	2769	H11	2785	J13	3644	D6	3660
2642	L6	2658	E8	2676	E9	2710	C12	2733	D5	2770	H10	2786	F10	3645	H7	3661



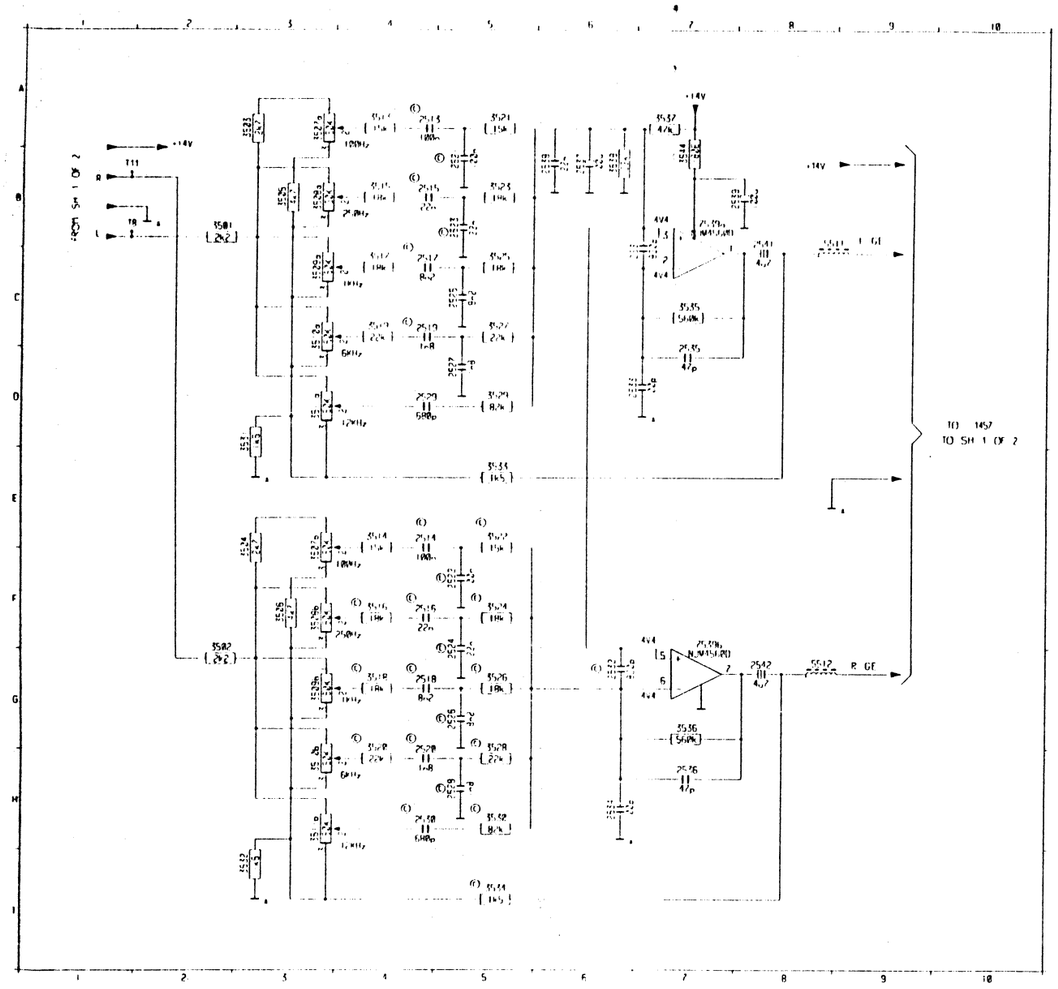
TAPE CORE CIRCUIT I



| | | |

| | | |

FRONT CIRCUIT II



ANODE CONNECTION

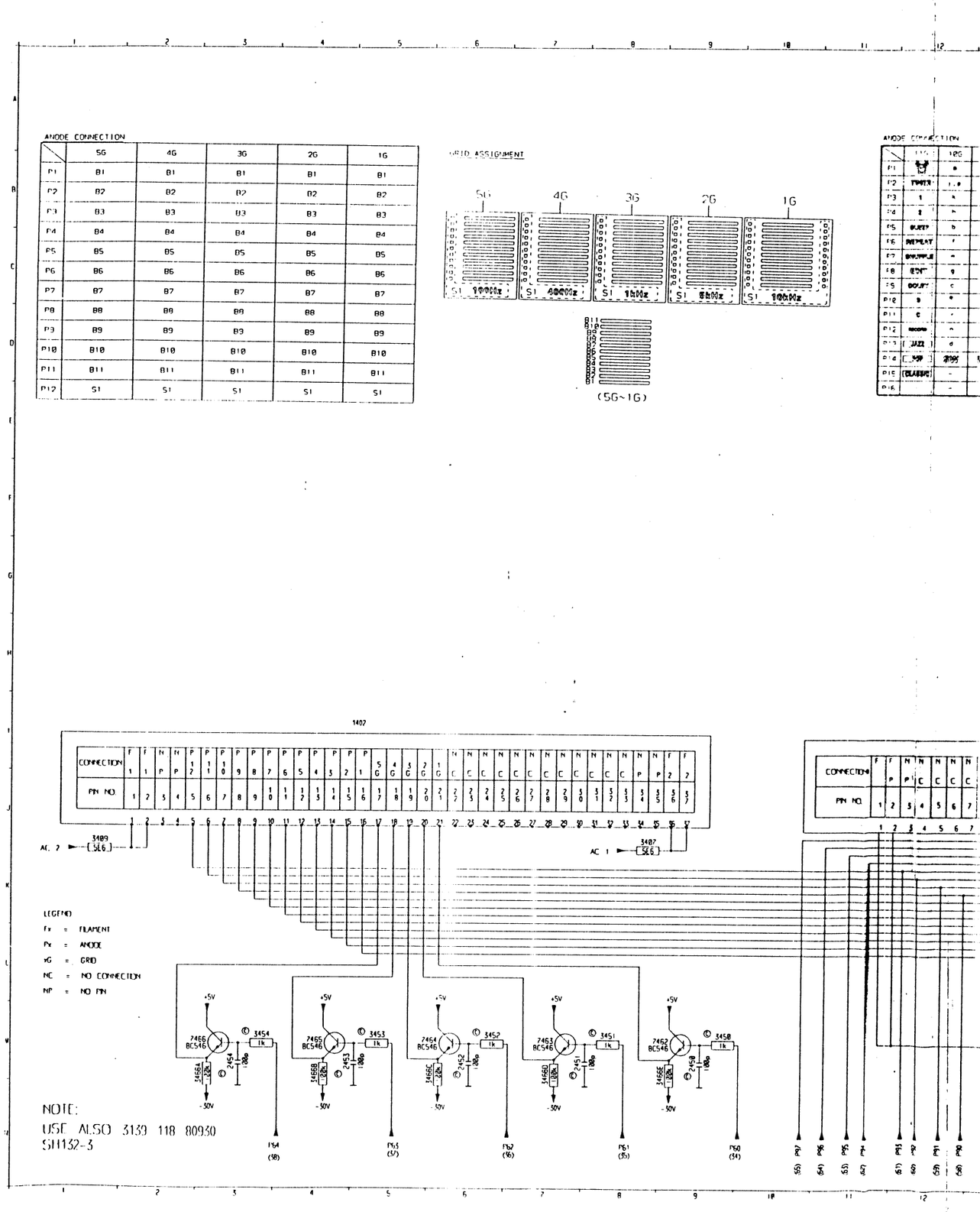
	5G	4G	3G	2G	1G
P1	B1	B1	B1	B1	B1
P2	B2	B2	B2	B2	B2
P3	B3	B3	B3	B3	B3
P4	B4	B4	B4	B4	B4
P5	B5	B5	B5	B5	B5
P6	B6	B6	B6	B6	B6
P7	B7	B7	B7	B7	B7
P8	B8	B8	B8	B8	B8
P9	B9	B9	B9	B9	B9
P10	B10	B10	B10	B10	B10
P11	B11	B11	B11	B11	B11
P12	S1	S1	S1	S1	S1

GRID ASSIGNMENT

(5G~1G)

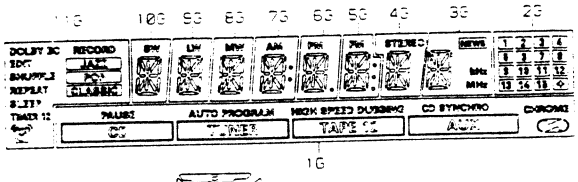
ANODE CONNECTION

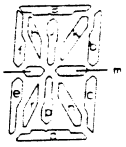
	1G
P1	a
P2	TWIST
P3	1
P4	2
P5	DUET
P6	REPEAT
P7	ENSEMBLE
P8	ECHO
P9	SOLIST
P10	9
P11	C
P12	RECORD
P13	JAZZ
P14	SYN
P15	(CLASSIC)
P16	



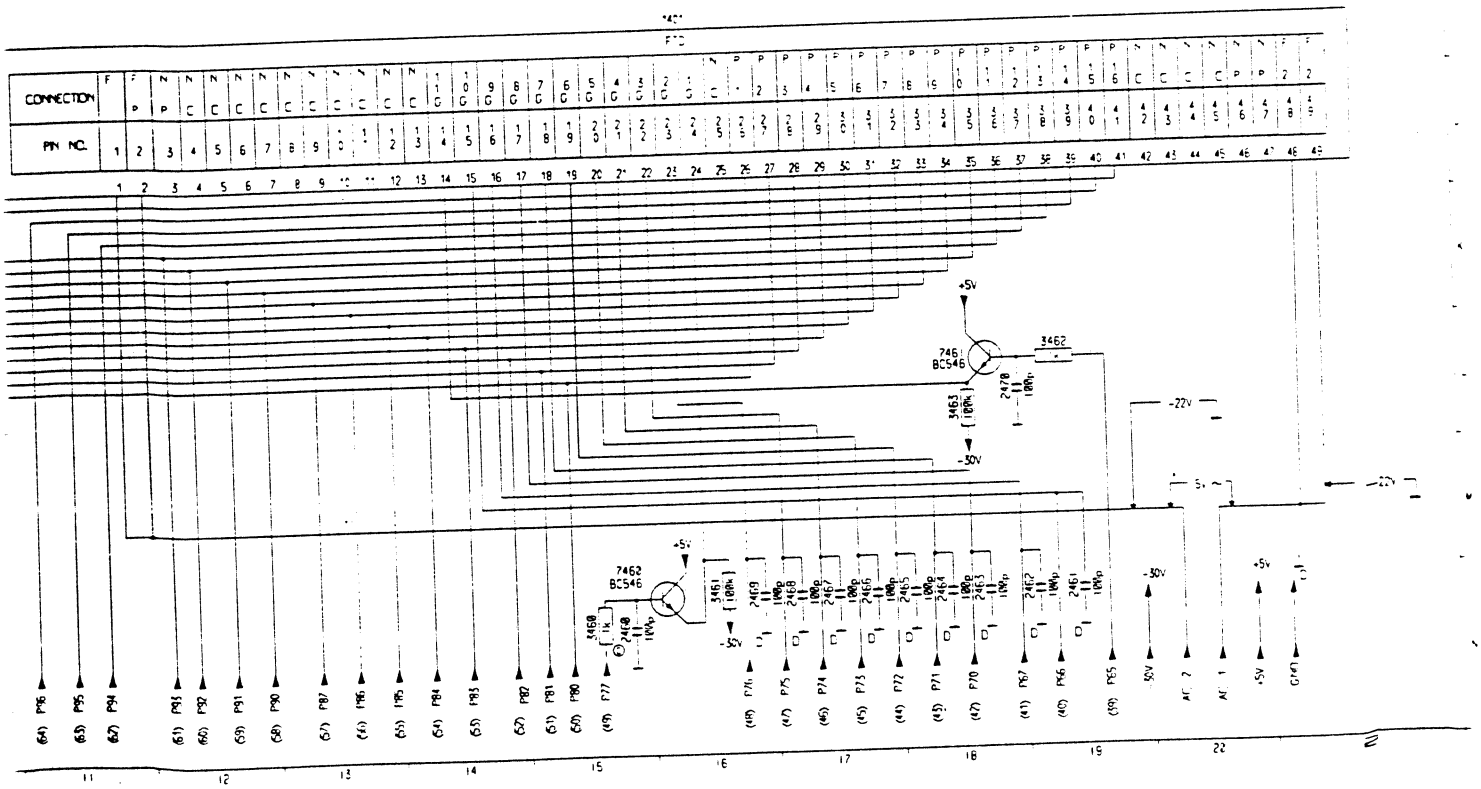
ANODE CONNECTION

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	
P1												PAUSE
P2	TIMER											AUTO
P3	1											PROGRAM
P4	2											HIGH SPEED DUBBING
P5	SLEEP											CD SYNCHRO
P6	REPEAT											CHROME
P7	SHUFFLE											
P8	EDIT											
P9	DOLBY											
P10	3											AUX
P11	C											TAPE
P12	RECORD											
P13	TAPE											
P14	CD											TUNER
P15	CLASSIC											CD
P16												



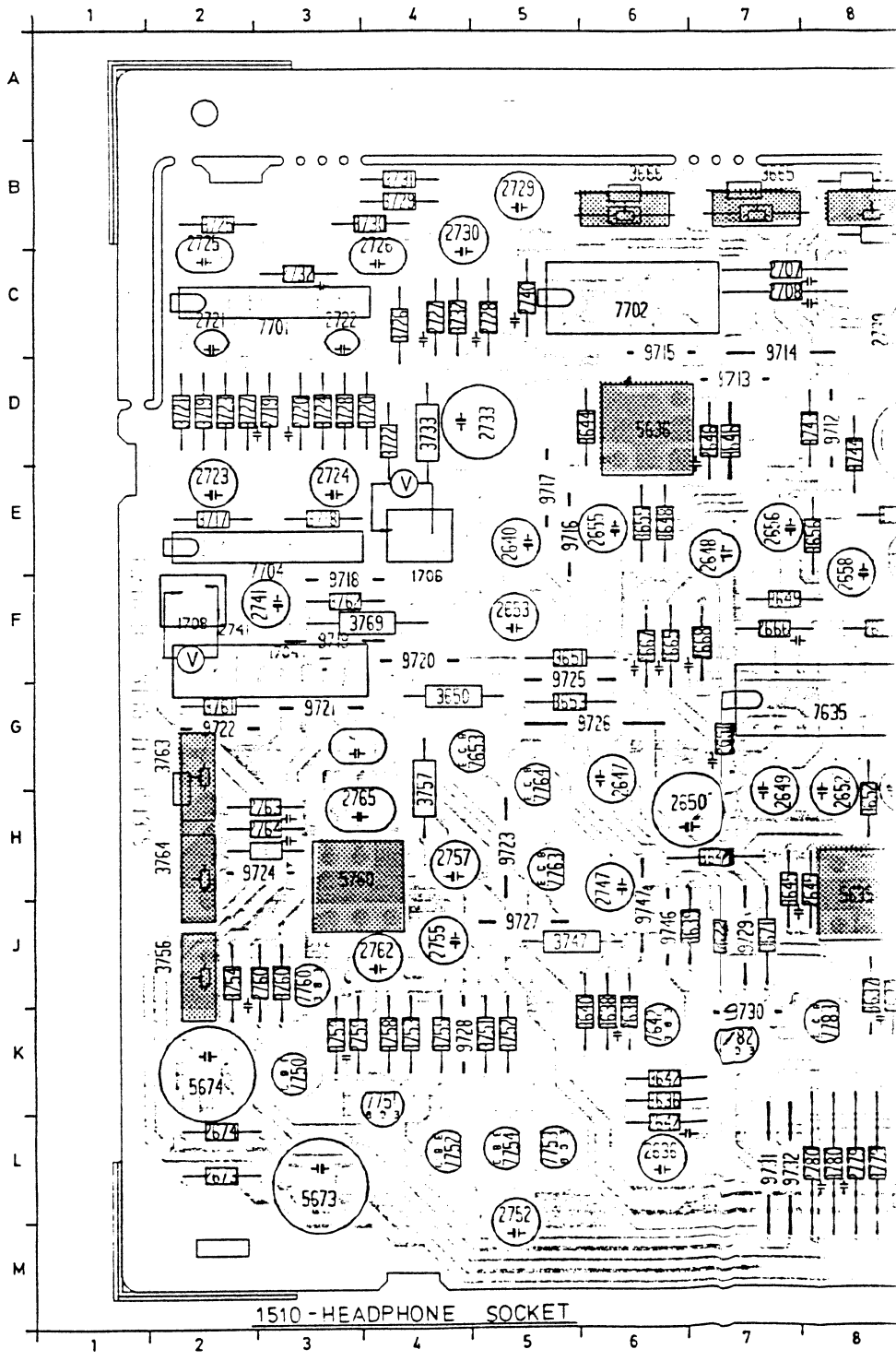


NOTE:
NUMBER IN (**) ARE PIN NUMBER OF 7400

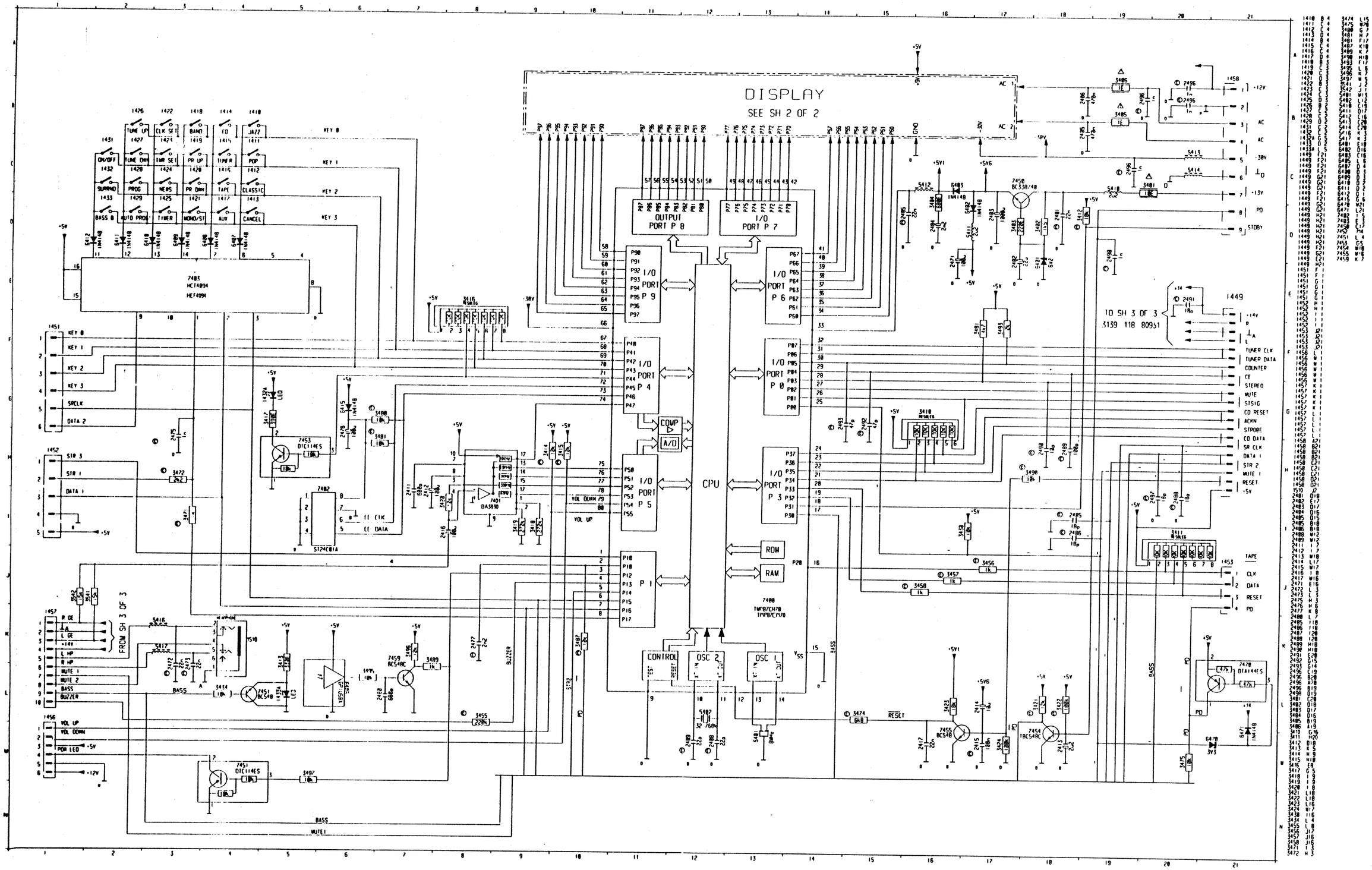


TAPE CORE COMPONENT LAYOUT

1699	M11	2643	K22	2659	G9	2680	L24	2712	C13	2739	C8	2771	J11	2787	J11	3645
1700	J15	2644	K22	2660	E9	2683	H24	2713	C12	2740	C5	2772	J11	2789	J10	3647
1701	B20	2645	H8	2661	F10	2684	H24	2719	D3	2741	F3	2773	J11	2790	H10	3648
1702	B22	2646	D7	2662	F10	2685	H23	2720	D3	2747	J6	2774	J13	2791	J14	3649
1703	E12	2647	G6	2663	H9	2699	E13	2721	C2	2752	L5	2775	G11	2792	H14	3650
1704	F3	2648	E7	2664	E8	2700	E13	2722	C3	2755	J4	2776	G10	3635	J10	3651
1706	E4	2649	H7	2665	F6	2701	D14	2723	E2	2757	H4	2777	J13	3636	K6	3652
1708	F2	2650	H7	2666	F7	2702	D12	2724	E3	2759	K3	2778	G13	3637	J8	3653
2635	J10	2651	G7	2667	F6	2703	E13	2725	B2	2760	J3	2779	L8	3638	K6	3654
2636	L6	2652	H8	2668	F7	2704	E12	2726	B4	2762	J4	2780	L8	3639	J6	3655
2637	J8	2653	F5	2669	G9	2705	C14	2727	C4	2763	H3	2781	J14	3640	K6	3656
2638	K6	2654	J23	2670	F8	2706	C12	2728	C5	2764	H3	2782	H14	3641	J9	3657
2639	J9	2655	E6	2673	L2	2707	C7	2729	B5	2765	H3	2783	H13	3642	K6	3658
2640	E5	2656	E7	2674	L2	2708	C7	2730	B4	2768	K11	2784	F11	3643	J9	3659
2641	J9	2657	H9	2675	G9	2709	C13	2732	B3	2769	H11	2785	J13	3644	D6	3660
2642	L6	2658	E8	2676	E9	2710	C12	2733	D5	2770	H10	2786	F10	3645	H7	3661



FRONT CIRCUIT I



NOTE

★ FOR FL/20 ONLY

‖ NOT FOR FL/20 FAMILY

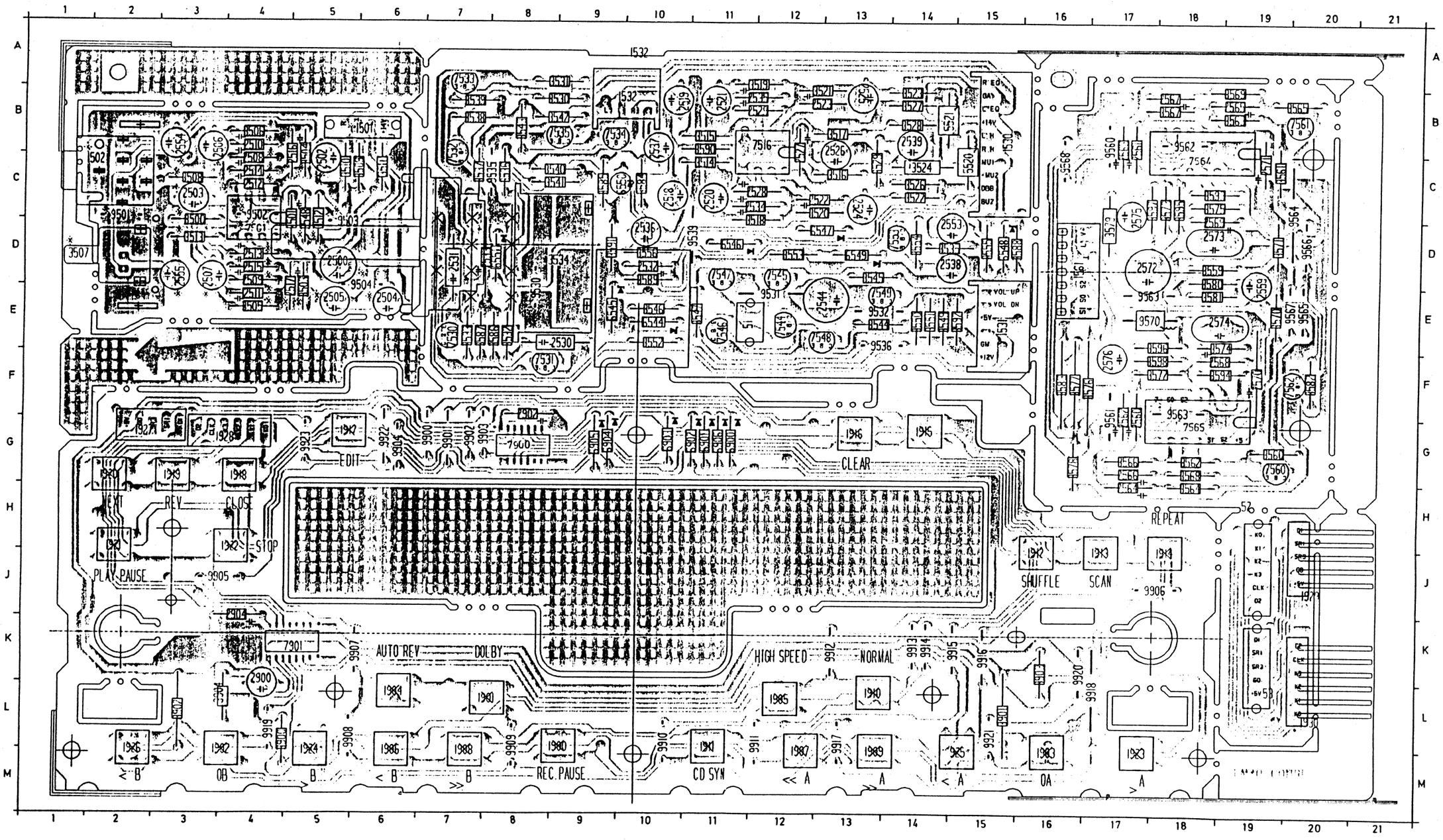
@ FOR FL/30 FAMILY ONLY

FRONT CHIP LAYOUT

| | | |

COMBI COMPONENT LAYOUT

051	E11	1904	L6	1918	G4	2501	C4	2515	D4	2529	B12	2555	D3	2572	D17	3511	C6	3525	A14	3540	C8	3554	D14	3570	E19	3584	C10	3598	E17	6550	C9	7533	A7	7565	F18	9561	F17	9904	G6	9918	K17
052	H19	1905	L12	1919	G3	2502	C5	2516	C4	2530	E8	2559	D19	2573	D18	3512	C5	3526	C14	3541	C8	3555	D15	3571	D19	3585	C9	3900	L4	6551	D8	7534	B9	7900	G8	9562	B18	9905	J3	9919	L4
053	L19	1906	M6	1920	G2	2503	C3	2517	E4	2531	D7	2560	F17	2574	E18	3513	D3	3527	B14	3542	B9	3556	D10	3572	F17	3586	E8	3901	L15	6900	G11	7535	B9	7901	K5	9563	F18	9906	J18	9920	K17
1501	B6	1907	M12	1921	H2	2504	E6	2518	C10	2532	D10	2561	B17	2575	C17	3514	B11	3528	B14	3543	B8	3559	D18	3573	C18	3587	E7	3902	K3	6901	G11	7544	E12	9501	C2	9564	C19	9907	K9	9921	L15
1502	B2	1908	M7	1922	H4	2505	E5	2519	[illegible]	2533	D8	2562	F17	2575	E17	3515	B11	3529	D13	3544	E13	3560	G19	3574	E18	3588	D15	3903	K16	6902	G11	7545	D12	9502	C4	9565	E20	9908	L5	9922	G6
1530	B15	1909	M13	1923	L17	2506	B3	2520	C11	2534	C12	2563	B17	2900	K4	3516	C13	3530	B9	3545	D13	3561	C19	3575	C18	3589	D10	3904	L4	6903	G10	7546	E11	9503	C5	9566	D20	9909	M8	9923	G5
1531	E15	1910	K13	1924	L5	2507	D3	2521	B11	2535	B12	2564	G17	3500	C3	3517	B13	3531	A9	3546	E10	3562	G18	3576	E17	3590	B11	5520	B15	6904	G9	7547	D11	9504	D5	9567	E20	9910	L10		
1532	A9	1911	M11	1925	L15	2508	B4	2522	C13	2536	C10	2565	B19	3504	B5	3518	C12	3532	E8	3547	E11	3563	B19	3577	E17	3591	D9	5521	B14	6905	G9	7548	E13	9530	E8	9568	C16	9911	L12	2902	F8
1561	C17	1912	H16	1926	L2	2509	D4	2523	B12	2537	B10	2566	G17	3505	E4	3519	A12	3533	E7	3548	C5	3564	G18	3578	G18	3592	E15	6544	E10	6906	G11	7549	D13	9531	E12	9569	D17	9912	K13	2904	J4
1561	D16	1913	H17	1927	G2	2510	B4	2524	C13	2538	D14	2567	B18	3506	B4	3520	C13	3534	D8	3549	E14	3565	A20	3579	D17	3593	C18	6545	E9	7501	D4	7553	D14	9532	E13	9570	E17	9913	K14		
1900	H9	1914	H18	1928	G8	2511	E4	2525	B13	2539	B14	2568	F19	3507	D1	3521	A12	3536	C8	3550	E14	3566	G17	3580	D18	3594	F18	6546	D11	7516	B12	7560	G19	9535	C8	9900	G7	9914	K14		
1901	L8	1915	G14	1929	J20	2512	C4	2526	B13	2544	E13	2569	C18	3508	C3	3522	C14	3537	C7	3551	E14	3567	B18	3581	D18	3595	C18	6547	C13	7530	E7	7561	B20	9536	E13	9901	G7	9915	K15		
1902	M4	1916	G13	1930	L20	2513	D4	2527	B12	2553	C14	2570	F19	3509	C5	3523	A14	3538	B7	3552	E10	3568	G18	3582	F20	3596	E17	6548	D15	7531	F8	7562	E20	9539	D11	9902	G7	9916	K15		
1903	L16	1917	G5	2500	D5	2514	C4	2528	C12	2554	B3	2571	B19	3510	C5	3524	C14	3539	B7	3553	D12	3569	B19	3583	F16	3597	C17	6549	D13	7532	B7	7564	B18	9550	B17	9903	G7	9917	M13		

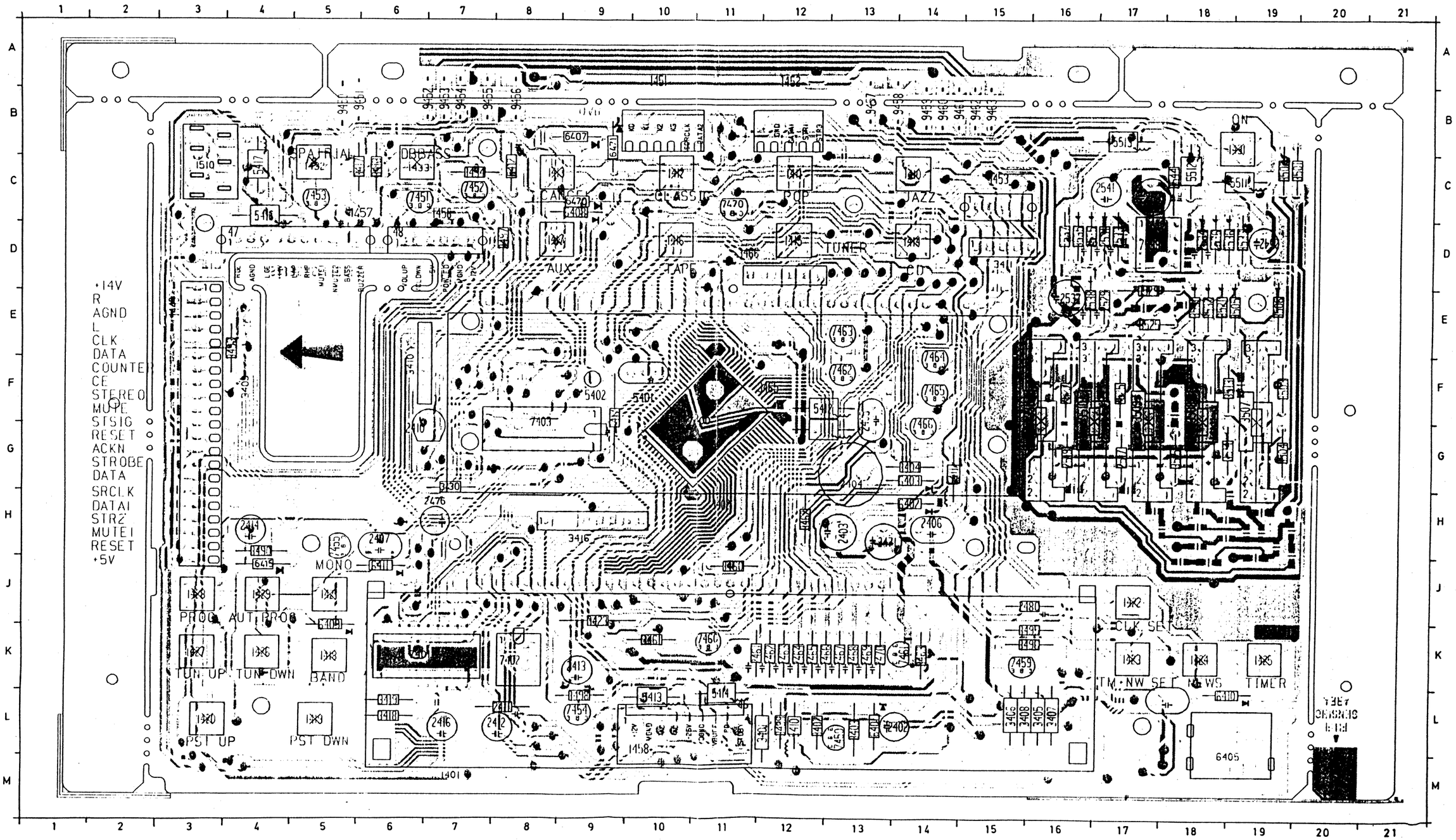


NOTE

-X- FOR -/21 ONLY

FRONT COMPONENT LAYOUT

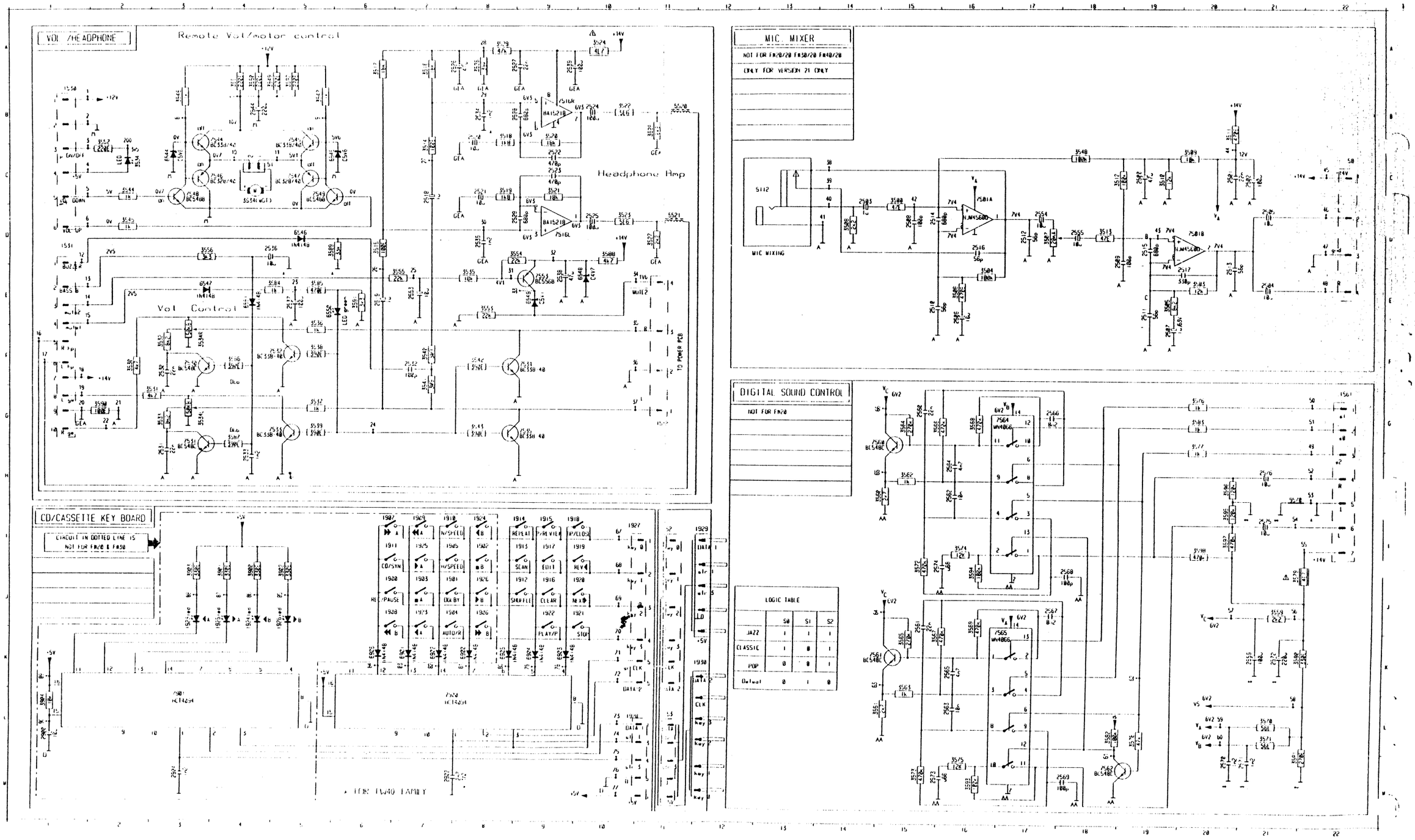
046	L11	1415	D12	1425	K19	1453	C15	2406	H14	2417	G9	2470	K13	2533	D17	3402	L12	3413	C6	3461	K10	3499	L12	3510	F16	3533	D19	5413	L10	6405	M18	7403	G8	7462	F13	9454	B7		
047	D4	1416	D10	1426	K4	1456	C7	2407	H6	2461	K11	2471	H13	2534	D18	3403	L13	3416	H9	3462	H12	3501	C19	3511	F16	3535	D16	5414	L11	6407	B9	7450	L13	7463	E13	9455	B7	2476	H7
048	D6	1417	D8	1427	K3	1457	C5			2462	K12	2480	J16	2535	D16	3404	G14	3417	C5	3463	K14	3502	C19	3513	F18	3536	D18	5416	C4	6408	C9	7451	C6	7464	F14	9456	B8	3490	H4
1401	M7	1418	K5	1428	J3	1458	L10			2463	K12			2536	D18	3405	L16	3418	L6	3465	F12	3503	F19	3514	G18	3537	D16	5417	C4	6409	K5	7452	C7	7465	F14	9457	B13	6415	J4
1402	H11	1419	L5	1429	J4	1490	E3	2410	G6	2464	K12	2517	G17	2537	E16	3406	L15	3419	L6	3466	D11	3504	G19	3515	G18	3544	C18	5511	C19	6410	L18	7453	C5	7466	G14	9458	B13	6470	C9
1410	C14	1420	L3	1431	B19	1510	C3	2411	L8	2465	K12	2519	G16	2538	E16	3407	L16	3423	J9	3493	E4	3505	E19	3521	E18	5401	F10	5512	C18	6411	J6	7454	L9	7539	D17	9459	B14	6471	B9
1411	C12	1421	J5	1432	C5	2402	L14	2412	L8	2466	K12	2525	F17	2539	C17	3408	L15	3424	J4	3495	K16	3506	E19	3525	E17	5402	F9	5513	B17	6412	C8	7455	H5	9450	B5	9460	B14	7470	C11
1412	C10	1422	J17	1433	C6	2403	H13	2413	K9	2467	K13	2527	F16	2541	C17	3409	F4	3430	H7	3496	K16	3507	F19	3529	E17	5410	L12	6401	L13	7400	G11	7459	K15	9451	B5	9461	B14		
1413	C8	1423	K17	1451	A10	2404	G13	2414	H4	2468	K13	2529	E17	2542	D19	3410	F6	3434	C7	3497	D8	3508	F18	3531	E18	5411	G14	6402	H14	7401	K6	7460	K11	9452	B6	9462	B15		
1414	F14	1424	K18	1452	A12	2405	G13	2416	L7	2469	K13	2531	D17	3401	L12	3411	D15	3460	J11	3498	L9	3509	F17	3532	E18	5412	F12	6403	G14	7402	K8	7461	K14	9453	B7	9463	B15		



PCS 62 576

SELECTOR COMPONENT LAYOUT

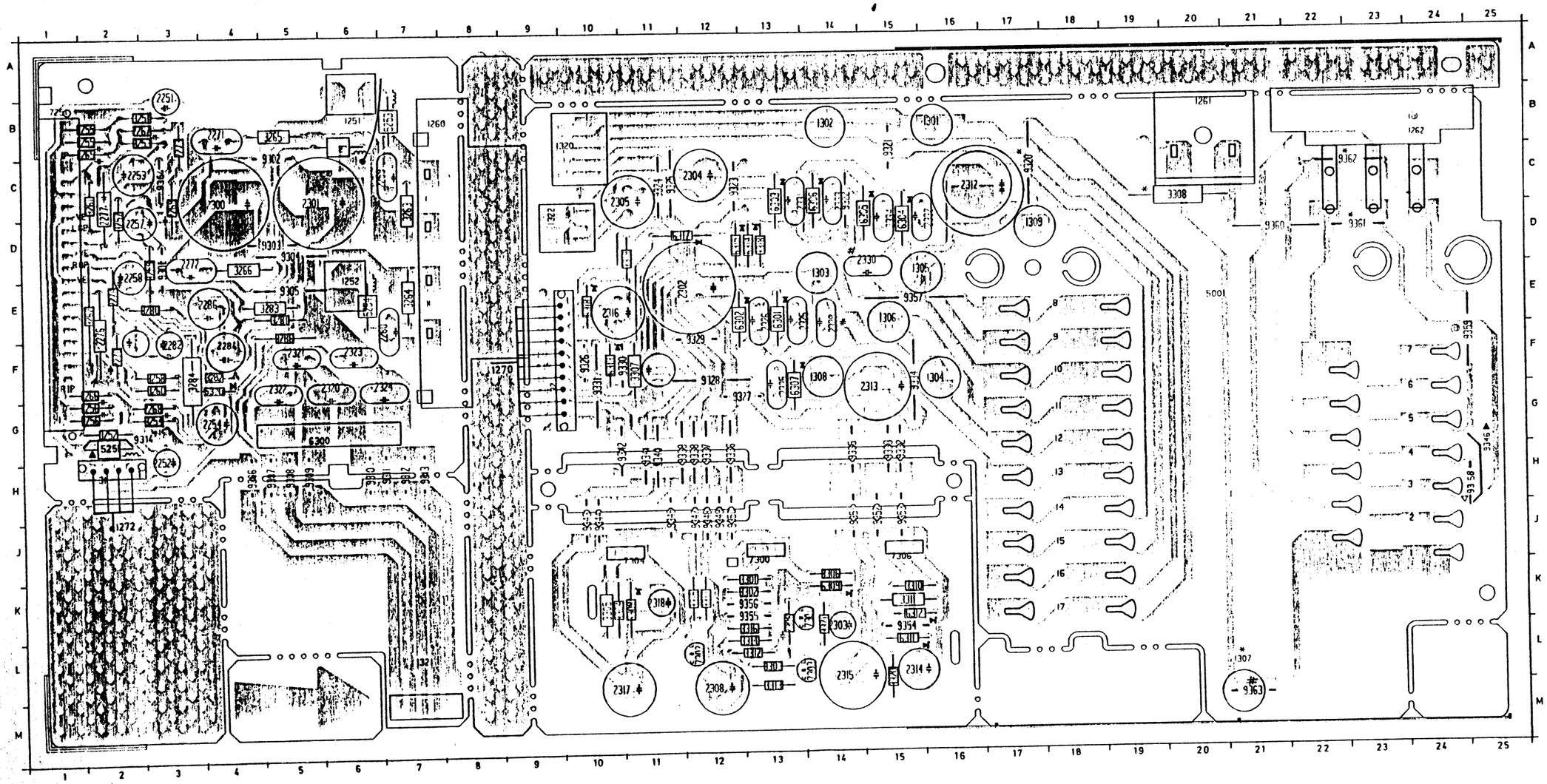
| | | |


VOL /HEADPHONE
Remote Vol/motor control
Headphone Amp
Vol Control
MIC MIXER
NOT FOR FA20/20 FA30/20 FA40/20
ONLY FOR VERSION 21 ONLY
MIC MIXING
DIGITAL SOUND CONTROL
NOT FOR FA20
LOGIC TABLE
JAZZ
CLASSIC
POP
Default
CD/CASSETTE KEY BOARD
CIRCUIT IN DOTTED LINE IS NOT FOR FA20 & FA30
TO POWER PCB
* FOR FA40 FAMILY

POWER COMPONENT LAYOUT

031 H2 1262 B24 1307 L21 2252 G3 2259 C7 2270 F2 2277 C3 2303 K14 2313 F15 2321 F5 2330 D15 3252 G2 3259 D3 3266 D4 3286 E5 3307 F11 3314 L13 6300 G5 6307 F13 6315 D12 7303 L14 9305 E5 9312 H7 9324 C11 9331 F10 9338 G12 9345 J11 9352 J15 9359 F25 1270 F8
032 G9 1301 R16 1308 F14 2253 C2 2260 E7 2271 B4 2282 F3 2304 C12 2314 L15 2322 F5 2331 C13 3253 B3 3260 F3 3280 E3 3301 K13 3308 C20 3315 K12 6301 E13 6308 K11 6317 D12 7304 J11 9306 H4 9313 H7 9325 C11 9332 G15 9339 G11 9346 H25 9353 J15 9360 D21 1272 J2
033 F9 1302 B14 1309 D17 2254 G4 2265 B2 2272 D3 2284 F4 2305 C11 2315 L14 2323 F6 2332 D16 3254 G3 3261 C2 3281 E5 3302 K13 3316 L13 6302 E12 6309 K14 6318 E10 7306 J15 9307 H5 9314 G2 9326 E10 9333 G15 9340 G11 9347 J12 9354 K15 9361 D23 1273 A7
1251 B6 1303 E14 1320 B10 2255 B2 2266 G2 2273 B3 2286 E4 2306 K13 2316 E10 2324 F7 2333 C14 3255 B2 3262 E2 3282 F4 3303 L13 3310 K15 3318 D13 6303 C13 6311 L15 7251 B1 9301 D3 9308 H5 9320 C17 9327 G12 9334 F15 9341 G11 9348 J12 9355 K13 9362 C23 3317 K12
1252 E6 1304 F16 1321 L7 2256 G2 2267 B3 2274 E2 2300 C4 2308 L12 2317 K10 2325 E13 2334 D15 3256 G2 3263 C7 3283 E5 3304 K10 3311 K15 3319 D11 6304 D15 6312 K15 7300 J13 9302 C5 9309 H5 9321 C15 9328 F12 9335 H14 9342 G11 9349 J12 9356 K13 9363 M21 3320 L15
1260 B7 1305 E15 1322 D9 2257 D2 2268 G3 2301 C5 2309 F11 2318 K11 2326 E13 2335 F13 3257 D2 3264 E7 3284 E3 3305 K10 3312 L13 5001 E20 6305 D15 6313 F10 7301 K14 9303 D5 9310 H6 9322 C14 9329 F12 9336 G12 9343 J10 9350 J12 9357 E15 9364 C7 3321 L13
1261 B20 1306 E15 2251 A3 2258 E2 2269 C3 2276 E2 2302 E12 2312 C16 2320 F6 2329 E14 3251 B3 3258 F3 3265 B5 3306 K14 3313 L13 5251 G2 6306 C14 6314 D13 7302 L12 9304 D5 9311 H7 9323 C12 9330 F11 9337 G12 9344 J10 9351 J14 9358 H25

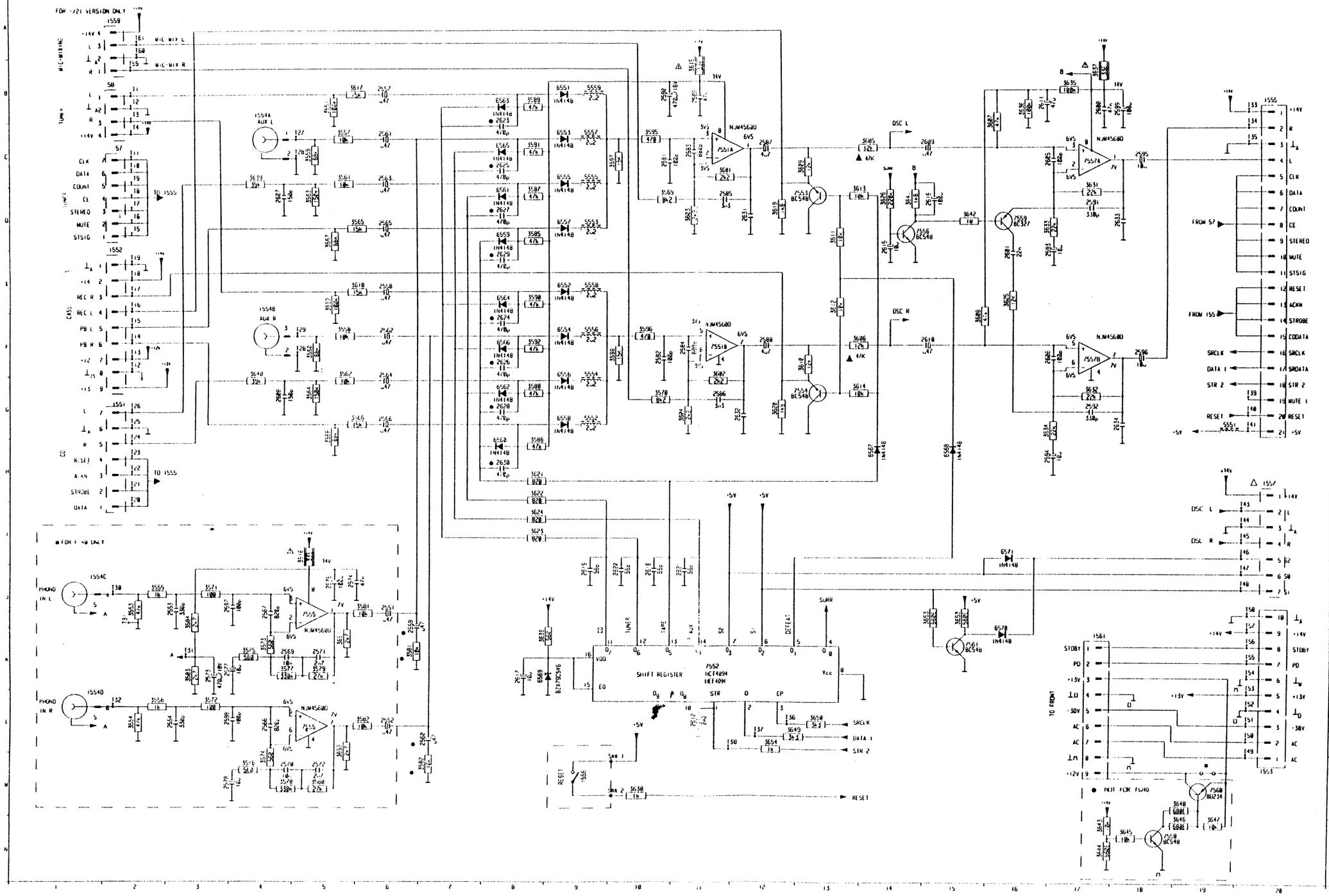
5252 B6
5253 B7
5254 E6
6320 F4



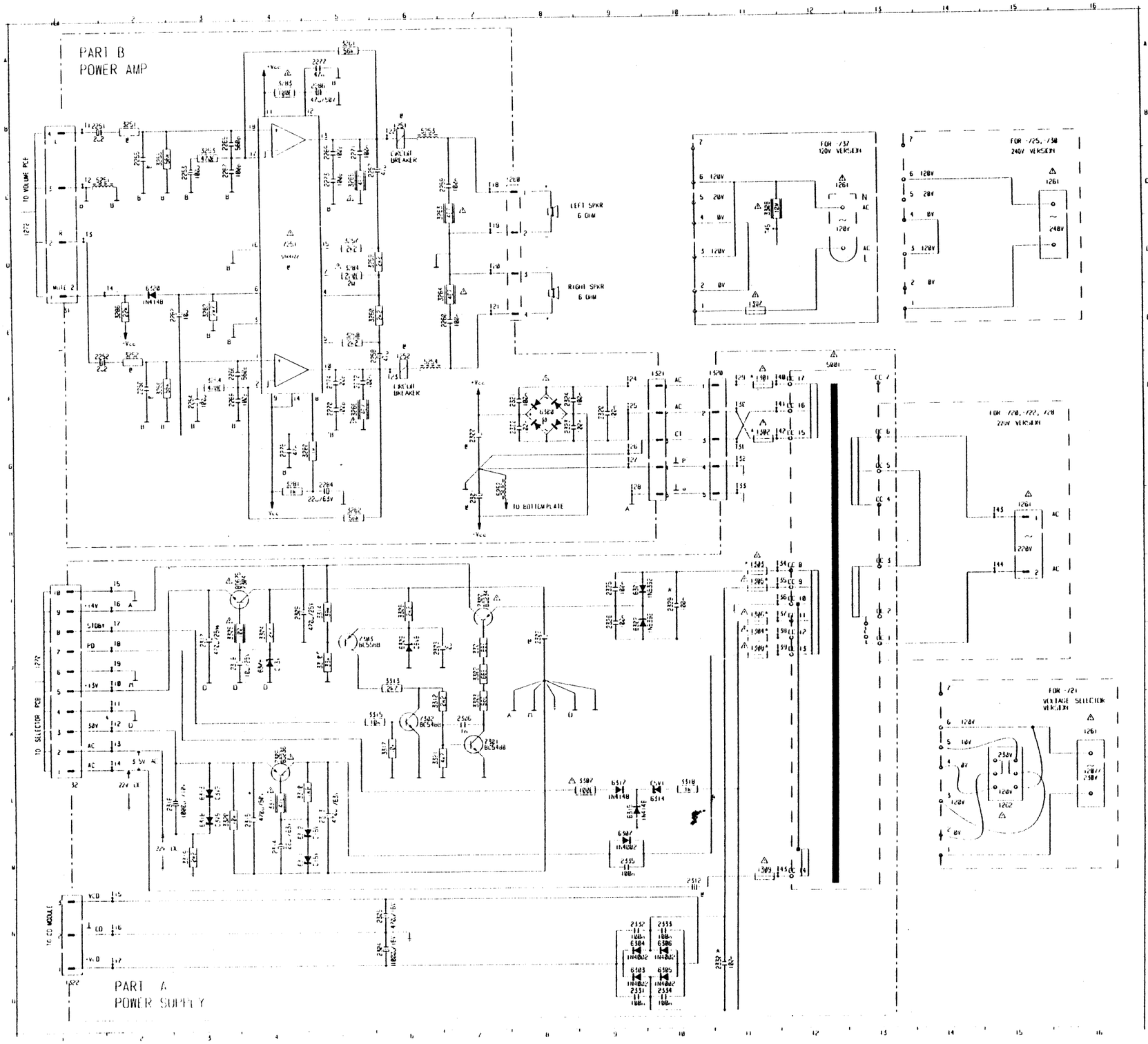
NOTE :

- ▲ FOR -/20 ONLY
- @ FOR -/21 ONLY
- ▽ FOR -/25 AND -/30 ONLY
- ✱ FOR -/37 ONLY
- ≠ NOT FOR -/37

SELECTOR CIRCUIT



PCS 62 572



IC 7251 VOLTAGES

Pin No.	FW20	FW30
1	0 1V	-0 1V
2	-0 1V	-0 1V
3	0V	0V
4	-15 4V	-18 5V
5	1 2V	-1 0V
6	0V	0V
7	+15 5V	-21 3V
8	+16 0V	-22 0V
9	+16 2V	-22 1V
10	0V	0V
11	+16 4V	22 1V
12	+15 5V	21 0V
13	0V	0V
14	+16 2V	-22 1V
15	1 2V	-1 0V
16	0V	0V
17	0 1V	-0 1V
18	0 1V	-0 1V

TRANSISTOR VOLTAGE

Pin No	ITEM NO					
	7305	7501	7502	7505	7507	7506
E	21 5V	0V	0V	6 7V	+5 8V	-50 0V
B	20 8V	0 6V	0V	6 2V	+2 5V	-29 2V
C	14 0V	20 6V	0 3V	1 5V	21 5V	47 2V

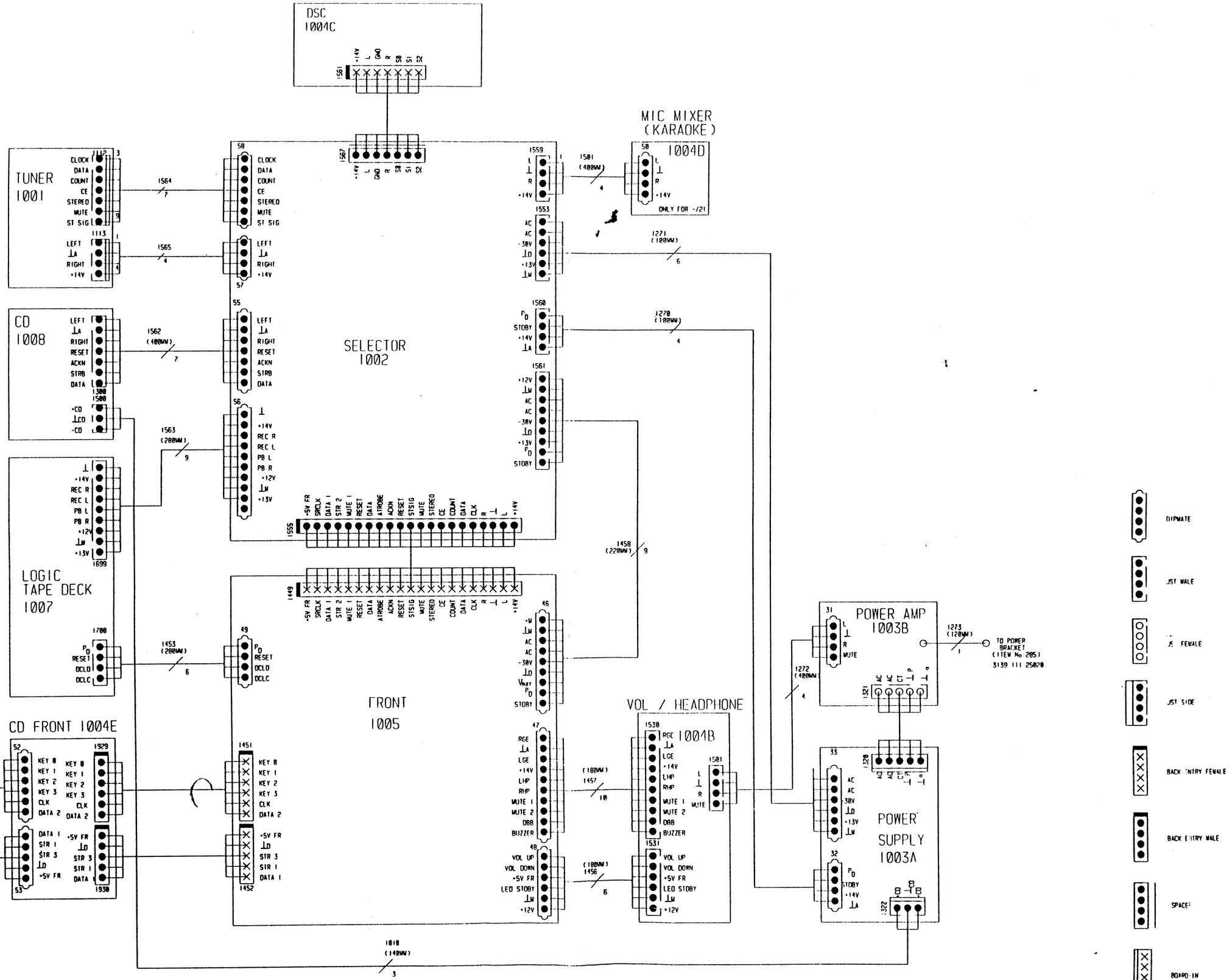
NOTE FOR ITEMS MARKED ※

ITEMS	FW28	FW38	FW48
7251	STK4112		STK4150
6508	05SB	05SB	05SB
6500 6501	550B /75V		550B /150V
1251 1252	1 75A	2 0A	2 5A
5251 5252	22k	10k	5k5
2255 2258	2200pF	470pF	1n
2512	470n		1000n
2502	2200n		5600n

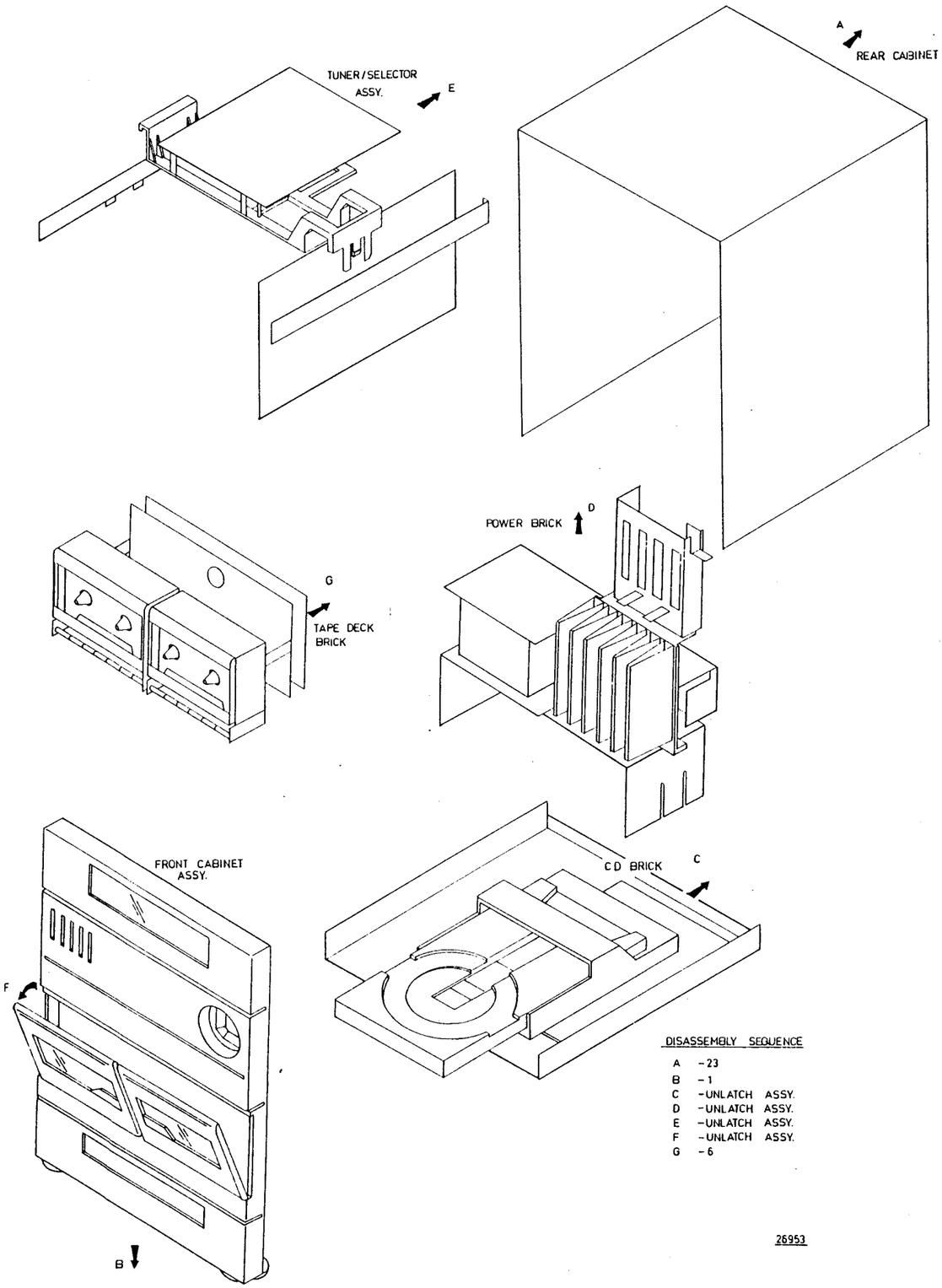
Item Marked ※	FW28		FW38		FW48	
	Others	/37	Others	/37	Others	/37
1501 1502	2A	3 15A	3 15A	5A	6A	5A
1505 1504 1505 1506	0 63A	1 25A	0 63A	1 25A	0 63	1 25A
1507	-	2A	-	2A		2A
1508 1509	0 63A	1 25A	0 63A	1 25A	0 63	1 25A

※ NOTE FOR /37

WIRING DIAGRAM



DISASSEMBLY DRAWING

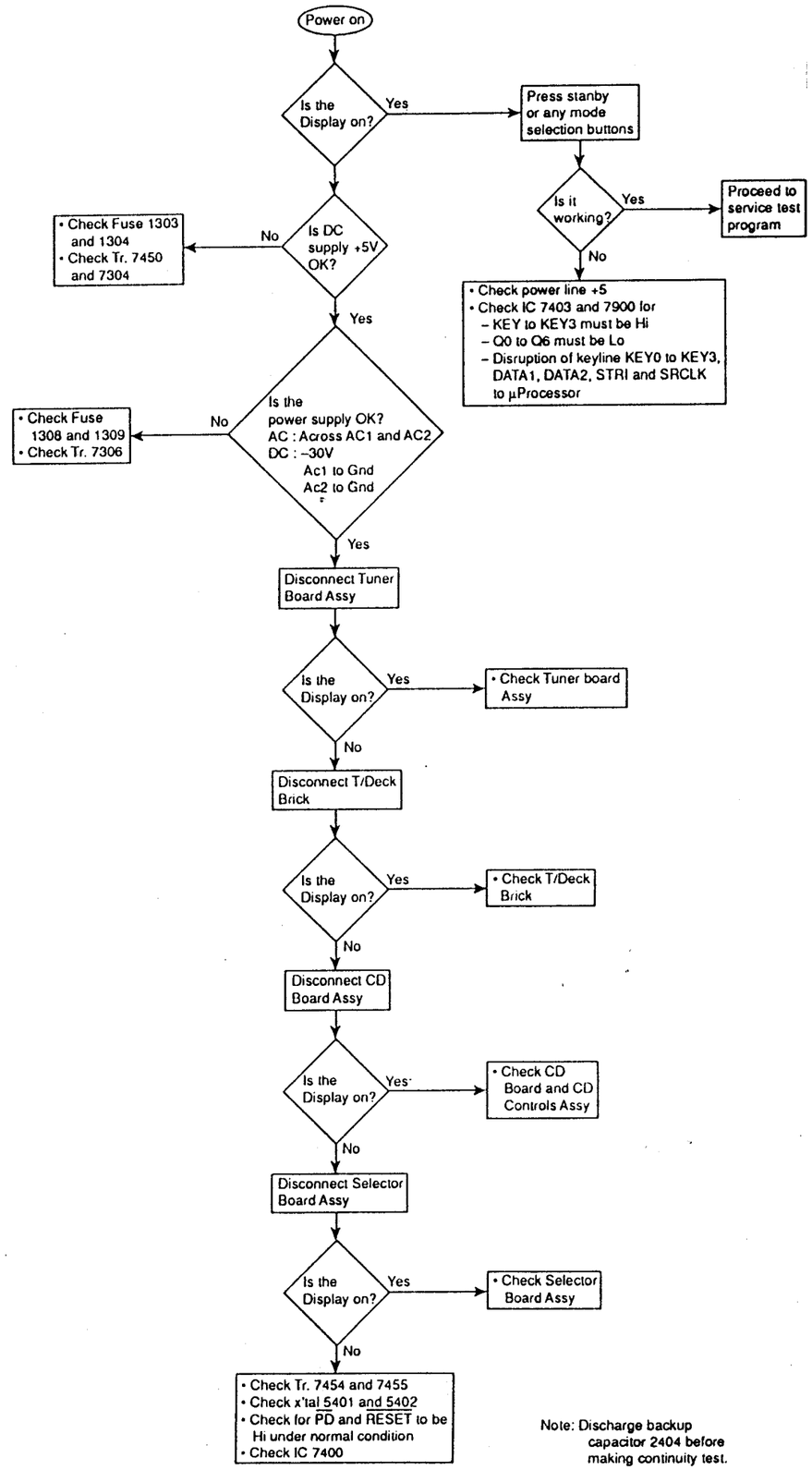


DISASSEMBLY SEQUENCE

A	– 23	
B	– 1	
C	– UNLATCH	ASSY.
D	– UNLATCH	ASSY.
E	– UNLATCH	ASSY.
F	– UNLATCH	ASSY.
G	– 6	

26953

REPAIR CHART


Power on
Is the Display on?
Yes
Press stanby or any mode selection buttons
Is it working?
Yes
Proceed to service test program
No
• Check power line +5
• Check IC 7403 and 7900 for
– KEY to KEY3 must be Hi
– Q0 to Q6 must be Lo
– Disruption of keyline KEY0 to KEY3, DATA1, DATA2, STRI and SRCLK to µProcessor
No
Is DC supply +5V OK?
• Check Fuse 1303 and 1304
• Check Tr. 7450 and 7304
Yes
Is the power supply OK?
AC : Across AC1 and AC2
DC : –30V
Ac1 to Gnd
Ac2 to Gnd
• Check Fuse 1308 and 1309
• Check Tr. 7306
Yes
Disconnect Tuner Board Assy
Is the Display on?
Yes
• Check Tuner board Assy
No
Disconnect T/Deck Brick
Is the Display on?
Yes
• Check T/Deck Brick
No
Disconnect CD Board Assy
Is the Display on?
Yes
• Check CD Board and CD Controls Assy
No
Disconnect Selector Board Assy
Is the Display on?
Yes
• Check Selector Board Assy
No
• Check Tr. 7454 and 7455
• Check x'tal 5401 and 5402
• Check for PD and RESET to be Hi under normal condition
• Check IC 7400

Note: Discharge backup capacitor 2404 before making continuity test.

SERVICE TEST PROGRAM 1

Operating sequence	Display shows	Remarks	In case of problems check
Hold "Program" and "Preset Up" button down while Power on to enter Service test program.	µProcessor version # *SERVICE*	The master µProcessor version is display. After 2 seconds the "SERVICE" display appear.	
Press "Autoprogram" CAUTION: Activating this test will reset all presets, MW grid, 12/24 Hr clock and LW on/off feature.	*CLR PROM*	Clear Eeprom	
Press "Set clock" Repeated activation of "Set clock" will toggle between "SERVICE" and "32 KHZ".	*32 KHZ*	The Alarm buzzer is turned on and the clock is aligned by trimmer 2410 for 4096Hz at pin 10 of 1457 or pin 4 of 7400.	Check X'tal 5402.
Press "News" Press all other buttons Press "News"	*KEY* See Figure 1 *KEY OK* *SERVICE*	Hexadecimal codes will be display. "KEY OK" is display. After 2 seconds the "SERVICE" screen is restored.	"KEY ** " will be display when failure or incomplete key test is done. Check the respective keyline in case an error occurs.
Press "Timer" Press "Preset Up" Press "Preset Up"	Full Display Half Display Other half Display	Spatial LED is on while DBB LED is off. DBB and Spatial sound LEDs turns on. DBB and Spatial sound LEDs turn off.	Check display and power lines.
Press "BAND" Repeated activation will toggle between "FAST" and "NORM" clock.	*FAST CLK* *NORM CLK* *SERVICE*	Use this to change the clock/timer speed function. In the fast mode quick customer check in the clock/alarm function can be done. Normal speed clock will be restored by Power off or activating reset button. After 2 seconds the "SERVICE" screen will be restored.	
Press "Standby" to end the service test program.			

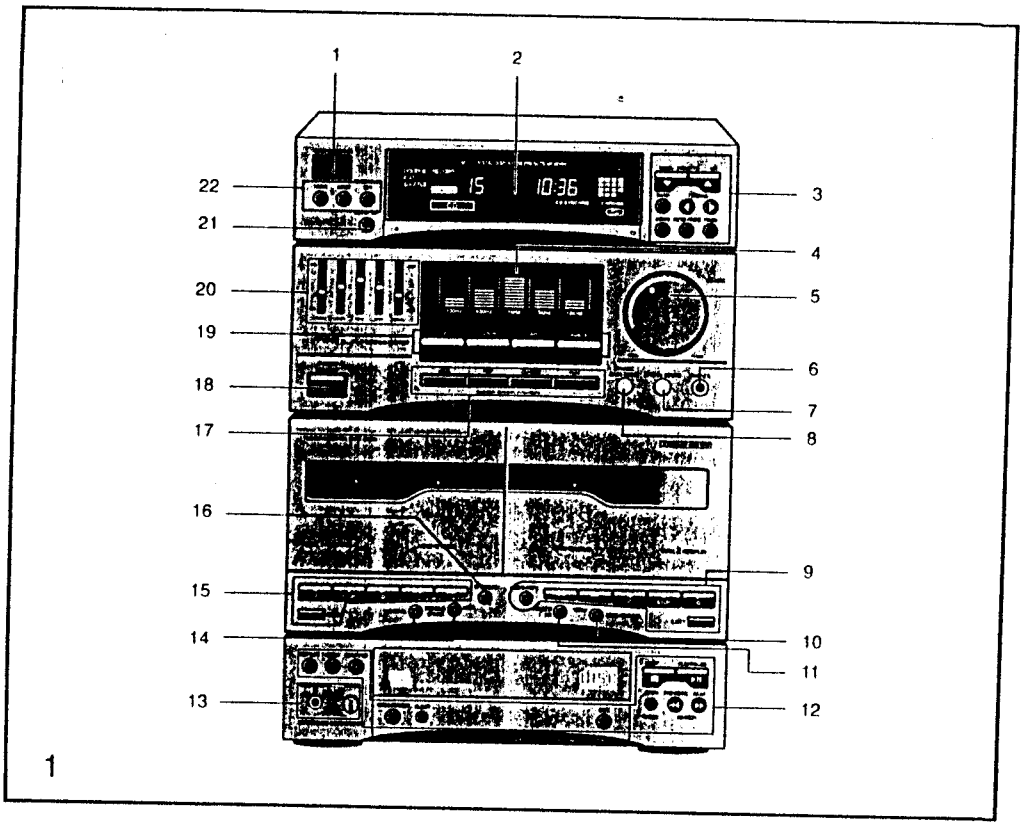
Note: FW** xx - OTP version
FW** x - Maskversion
where FW** refers to the Type No.
xx or x refers to the version.

SERVICE TEST PROGRAM 2

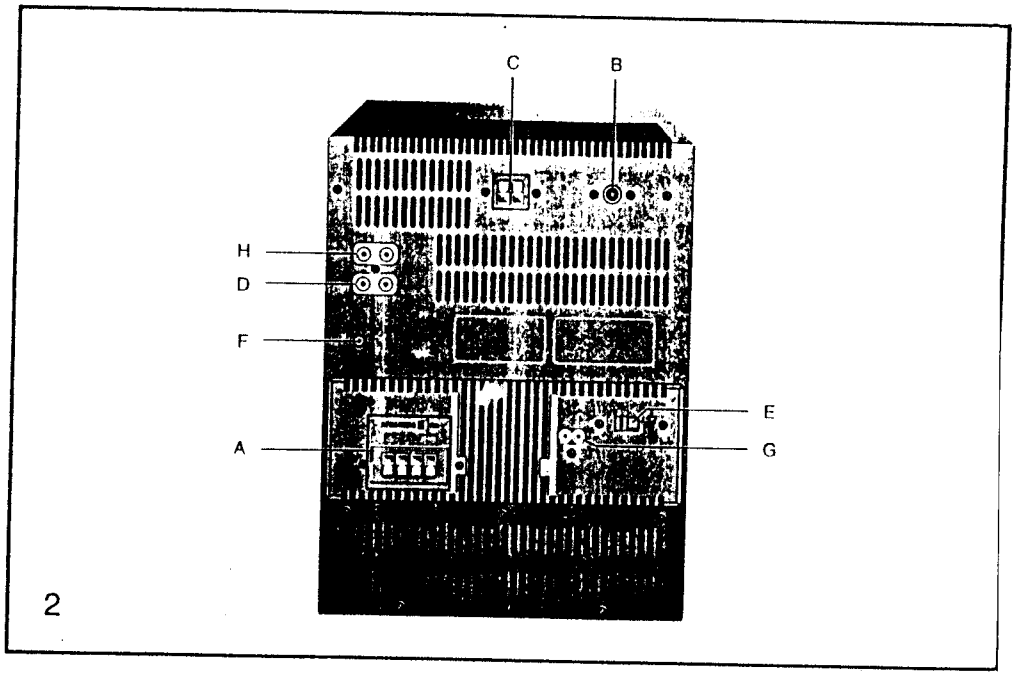
Operating sequence	Display shows	Remarks	In case of problems check
To perform CD test press "CD" at the "SERVICE" screen. Press "Stop" - Service pos 0 Press "Next" - Service pos 1 Press "Next" - Service pos 2 Press "Next" - Service pos 3 Pressing "Previous" will bring the set to the previous service mode.	*SERVO YY* *SLEDGE* *FOCUS* *MOTOR* *RADIAL*	The CD servo version is display. YY = version number During this test the sledge will move outward. Focus is switch on. Disc motor is switch on. Radial is switch on.	Pressing the "Play" key at the "SERVICE" screen will enter into normal CD mode except error codes are display. A list of error codes are found in figure 3.
To end the Service test program press "Standby" at the "SERVICE" screen.			
To perform Tuner test ensure no disc is in the CD tray and press "Tuner" at the "SERVICE" screen. Use the "Preset Up" and "Preset down" to display the loaded frequencies.	Tuner version See figure 2 *PROGRAM*	Tuner version is scrolled in the display. Service frequencies are now loaded into the EEROM of the µProcessor. FM auto-search level: With input level at 15µV adjust 3125 until "PROGRAM" just appear.	
Use Power off or Reset button to exit the Service program			

TRADE MODE

Operating sequence	Display shows	Remarks
Hold "Aux" and "Tape" down while Power on to enter the Trade mode. To exit Trade mode press the "Reset" button.	Commercial Story	During Trade mode the set provides 3 minutes of normal performance before returning to Trade mode. If during the normal function no sound source is detected it will return to Trade mode after 10 seconds.



1



2

SPECIFICATIONS

GENERAL

Mains voltage/setting		:	120V - 220V - 240V Serviceable Set at 120V for -/37 Set at 220V for -/20/22/28 Set at 240V for -/25/30
		:	120V - 230V Switchable Set at 230V for -/21
Mains frequency		:	50Hz - 60Hz
Clock Accuracy		:	< 4 seconds/day
Mains breakdown backup		:	< 10 minutes
Power consumption		:	162W max.
Dimension centre unit		:	555 x 306 x 301mm

TUNER : FM SECTION

Tuning range		:	87.5MHz - 108MHz
IF frequency		:	10.7MHz
Aerial input		:	75Ω coaxial 300Ω screw type adaptor for -/37
Sensitivity at 26dB S/N		:	< 5µV
Selectivity at 600kHz bandwidth		:	> 55dB
IF rejection		:	> 60dB
Image rejection		:	> 25dB

TUNER : AM SECTION

Tuning range	MW	:	522kHz - 1611kHz
	MW	:	530kHz - 1710kHz for -/21/37
	LW	:	153kHz - 279kHz
IF frequency		:	450kHz
Sensitivity at 26dB S/N	MW	:	< 3.0mV/M
	LW	:	< 6.0mV/M
Selectivity at 18kHz bandwidth	MW	:	> 24dB
	LW	:	> 28dB
IF rejection	MW	:	> 35dB
	LW	:	> 40dB
Image rejection	MW	:	> 27dB
	LW	:	> 40dB

AMPLIFIER

Output power at 10% distortion		:	2 x 30W -1dB
Speaker impedance		:	2 x 6Ω
Frequency response within -3dB		:	63Hz - 12kHz
Equalizer control		:	-6dB to +6dB
Dynamic bass boost		:	+7dB at 100Hz
Headphone output at 32Ω		:	25mW
Input sensitivity	Aux/TV	:	400mV at 47kΩ
	Mic	:	1.5mV at 600Ω
	Phono	:	2.7mV

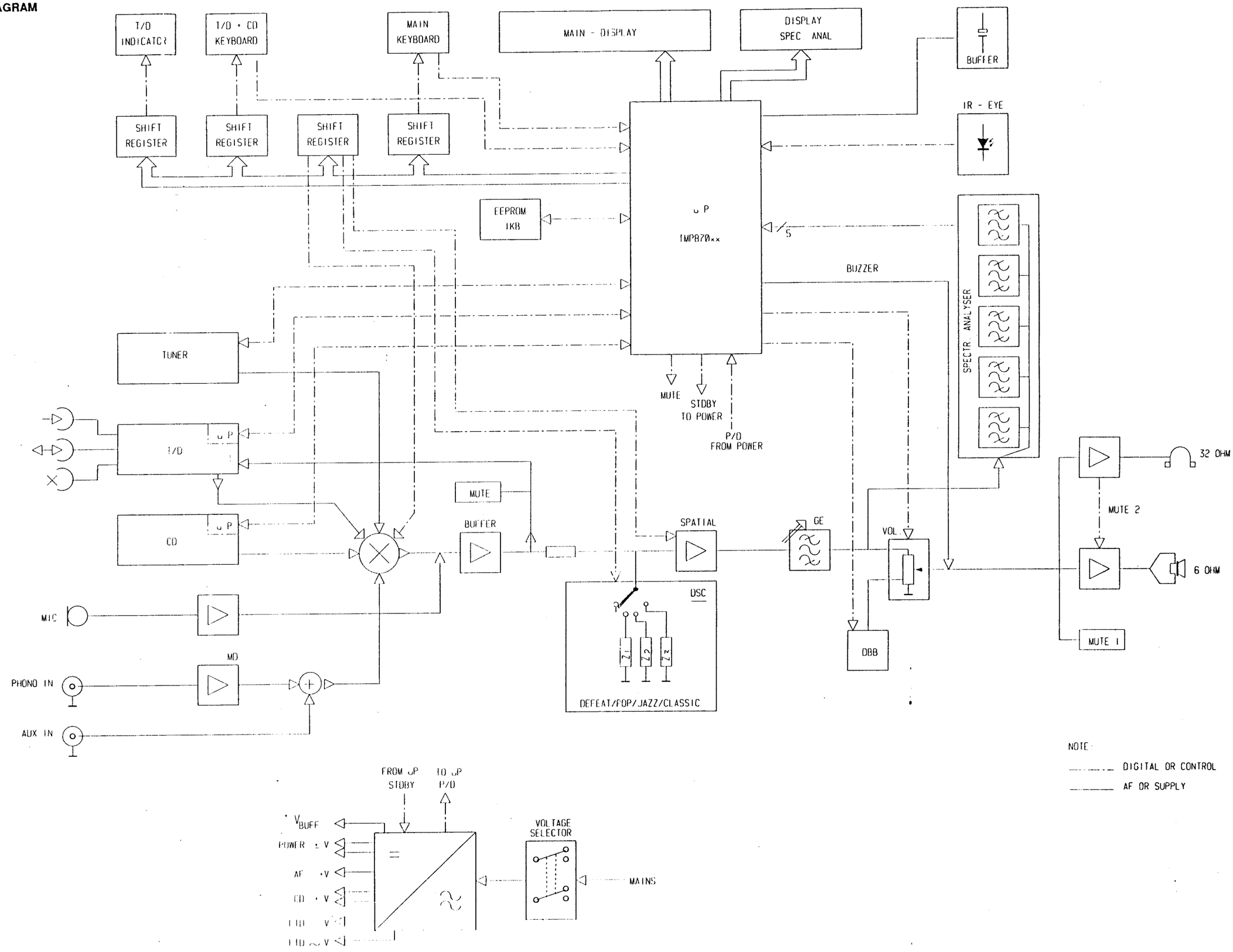
CASSETTE RECORDER

Number of track		:	2 x 2 stereo
Tape speed		:	4.76 cm/sec ± 2% 1.8 x 4.76 cm/sec
Wow and flutter		:	< 0.4% DIN
Fast-wind time C60		:	130 sec
Bias system		:	88kHz ± 4kHz
Recording playback frequency response within -7dB		:	125Hz - 12.5kHz
Signal to noise ratio	Recording	:	> 50dB (IEC I) > 54dB (IEC II)
	Dubbing	:	> 48dB
Dolby B factor		:	8.5dB

COMPACT DISC

Frequency response within +2dB/-4dB	:	20Hz - 20kHz
Signal/Hiss ratio	:	> 80dB
Distortion at 1kHz	:	< 0.5%
Channel difference at 1kHz	:	< 2dB
Channel crosstalk at 1kHz	:	> 50dB
De-emphasis	:	0 or 15/50 µS (Switched by subcode on the disc)

BLOCK DIAGRAM



SERVICE KEY TEST TABLE

Timer/News/Tuner	Display	Function	Display	Tape deck	Display	C D	Display
Timer	18	Standby	1E	CD Sync	3A	Repeat	29
Timer/News set	16	Dolby B NR	33	Auto-rev	34	Scan	2A
Clock set	15	HS dubbing	32	PB Deck		Shuffle	2B
Presets Down	12	NS dubbing	31	Play Rev	38	Prog/Review	25
Presets Up	13	DBB	20	Stop	37	Clear	27
Band	11	Spatial sound	1F	Play Fwd	36	Edit	26
Tuning Down	19	CD	0D	Fast Rew	35	Stop	24
Tuning Up	1A	Tuner	0E	Fast Fwd	39	Play/Pause	28
Mono	14	Tape	0F	R/P Deck		Open/close	21
Autoprog	1C	Aux/TV	10	Record/pause	3B	Previous	22
Prog	1B	Jazz	09	Fast Rew	3C	Next	23
		Pop	0A	Fast Fwd	30		
		Classic	0B	Play Rev	2D		
		Flat	0C	Stop	2E		
				Play Fwd	2F		

Figure 1

TUNER SERVICE TEST FREQUENCIES

PRESET	Eur	East	USA	Jap	Osea	Osea + SW
1	87.50 MHz	65.81 MHz	87.5 MHz	76.0 MHz	87.50 MHz	87.50 MHz
2	98.00 MHz	74.00 MHz	98.0 MHz	90.0 MHz	98.00 MHz	98.00 MHz
3	108.00 MHz	87.50 MHz	108.0 MHz	522 kHz	108.00 MHz	108.00 MHz
4	522 kHz	98.00 MHz	530 kHz	558 kHz	530 kHz	530 kHz
5	558 kHz	108.00 MHz	560 kHz	999 kHz	560 kHz	560 kHz
6	999 kHz	522 kHz	1000 kHz	1494 kHz	1000 kHz	1000 kHz
7	1494 kHz	558 kHz	1600 kHz	1611 kHz	1600 kHz	1600 kHz
8	1611 kHz	999 kHz	1710 kHz		1710 kHz	1710 kHz
9	153 kHz	1494 kHz				3.900 MHz
10	156 kHz	1611 kHz				4.250 MHz
11	198 kHz	153 kHz				8.000 MHz
12	270 kHz	156 kHz				11.900 MHz
13	279 kHz	198 kHz				12.100 MHz
14		270 kHz				
15		279 kHz				

Figure 2

CD ERROR CODES TABLE

Error codes	Check area	Remarks
ERR 1002	ICs 7000, 7060 and 7080	Focus error, no disc
ERR 1007	CDM 12 and Disc	Subcode error, no valid subcode
ERR 1008	Bad Disc and Lens	TOC error, out of lead-in area while reading TOC
ERR 1009	IC 7101 and 7102	CD decoder error
ERR 1010	IC 7000 and 7080	Radial error
ERR 1012	ICs 7000 and 7660	Fatal sledge error
ERR 1013	ICs 7102, 7140, 7141 and 7660	Turntable motor error
ERR 1030	CDM 12 and IC 7000	Too many grooves to jump
ERR 1031	CDM 12 and IC 7000	Search timeout
ERR 1032	CDM 12 and IC 7000	Search binary error
ERR 1033	CDM 12 and IC 7000	Search index error
ERR 1034	CDM 12 and IC 7000	Search time error.
ERR 1037	CDM 12 and IC 7000	Selection error
ERR 1050	Operating error	Edit calculation error
ERR 1051	Operating error	Edit track count error
ERR 1052	Operating error	Edit optimal error

Figure 3

ESD

(GB) **WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

(F) **ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) **WARNUNG**

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(NL) **WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) **AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.